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This publication is issued under the authority of Col KR Ward, CD, Director of Electrical and Mechanical Engineering. The contents have been approved for publication by Lt Col JP Sherren, CD.

The Bulletin is published to assist RCEME personnel in keeping abreast of current trends in developments, to amplify or emphasize technical instructions, to circulate news of Corps and individual activities, and to provide a forum for discussion and the exchange of ideas by members of the Corps. The information and statements herein do not necessarily represent official policy and are not to be quoted as authority for action.

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OUR COVER depicts a RCEME calendar, complete with the Corps' birthdate, and with Julian dates for machine data processing. Incidentally, the four months in the lefthand column are the proposed publishing dates for the Technical Bulletin for the year. And, instead of tying a string round your finger, we have circled the 15th of the preceding month in each case to remind you of the deadline for each issue.

And speaking of the Bulletin, you will see, beginning on page 39, an index to all ten years of the Bulletin published from 1956 to 1965. There were 28 issues altogether: 13 in the 8x 13 format and the last 15 in the more sophisticated present size. We missed only one issue (Jul 63) in the last four years.

A word here on the Julian system of dating might be of interest. The Julian date comprises four digits: the first represents the last digit of the year, while the other three represent the days of the year, numbered consecutively from 1 Jan to 31 Dec.

For example, the Julian date for 1 Jan 66 is 6001; for 31 Dec 66, 6365. In 1968 (Leap Year) 31 Dec will be 8366.

To carry this illustration a little further, four important Bulletin dates for this year are 6074, 6166, 6258 and 6349.

And how about writing in 1966. If your name does not appear among the authors during the ten years covered by the index -- and only a fraction of one percent do -- why not resolve right now to make your contribution to YOUR Corps magazine by the deadline 6074.

New Head of Corps and School Commandant

COLONEL AL MACLEAN CD

Col AL Maclean was born in Toronto on 29 January, 1918. He attended public and high schools in that city and graduated in engineering from the University of Toronto in 1941.

He was commissioned a lieutenant, OME 4th Class, in Jul 41 and took his officer training at OTC Brockville and Barriefield. (In his class at RCOCTC were Col GW Thompson, Lt Col RHC Hodgson and Maj PW Platt.) In Jan 42 he was posted to 1 Canadian Base Ordnance Workshop, Camp Borden, and went overseas with it in Mar 42. He spent two and a half years in the UK (Whitly and Bordon), going to France in the fall of 1944.

As a captain (Jun 42) he formed and commanded 1 Cdn Mobile Tire Repair Unit, RCEME in Belgium from Nov 44 until it was disbanded in Oct 45, earning a Mentioned in Despatches. He was promoted to major in Oct 45 on return to the UK where he was appointed 2IC 1 Sub-Workshop, RCEME, at Crookham, Hampshire.

Major Maclean returned to Canada in April 46 and was posted to Hagersville. In Oct the same year he went to London as workshop officer at 204 Base Workshop where he remained until Sep 47.

In Apr 47 he married Kathleen Richardson of Port Colborne, Ont. They have one son, Hugh Lachlan, born in 1949.

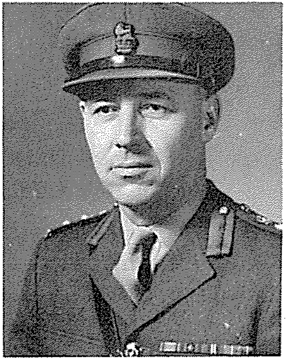
In Sep 47 he was selected to attend the First Advanced Ordnance Officers' Course at the US Army Ordnance School, Aberdeen Proving Ground. In Jun 48 he returned to Canada and was seconded to the faculty of RMC as an associate professor. While there he established the Department of Mechanical Engineering in the newly reopened college. He remained at RMC until Jan 52 when he went to the Canadian Army Staff College as a student. On completion of the course in Nov 52 he was appointed DAQMG (Plans) in DQOP at AHQ, Ottawa.

This job ended abruptly in Aug 54 when he was selected as one of the first officers to be sent to Indochina with the International Control Commission, with the rank of acting lieutenant colonel.

On return to Canada in Sep 55 he relinquished his acting rank and was appointed DADEME (Training) in DEME, where he stayed until Jul 57. At that time he was promoted to lieutenant colonel and posted to the Canadian Army Staff College as GSO1 (Directing Staff) for four years. In Jul 61 he went to DEE, AHQ, as TSO1 in charge of the Vehicle and Aircraft section. Two years later in Aug 63 he was appointed DDEME Plans, Training and Organization in DEME where he remained for another two years.

On 7 Sep 65 he was promoted to his present rank and appointed Commandant of the RCEME School and Head of the Corps of RCEME, taking over from Col KR Ward.

A Word from the DEME



COLONEL KR WARD CD

I look forward to the coming year with considerable interest for it should be one that will provide us with answers to the many questions raised during the year that has just passed. I look forward also with confidence knowing that our Corps has the knowledge, experience and spirit necessary to meet any challenge. Your loyalty and co-operation makes my task that much easier, and I thank you for this support.

May I wish you and your families all the very best and may they have all they desire in 1966.

SQUARE PEGS FOR SQUARE HOLES

By Capt WM Campbell

> "To a very significant degree the art of command consists of using people to the best of their abilities and in the right field".
>
> -Admiral RL Conolly, USN, Retired

The all-purpose staff officer has been part of the British staff system since the training of staff officers began over 100 years ago. Today's staff officer receives a general training at Staff College that is supposed to fit him for employment in both the operations and administration branches of the staff. This paper examines the feasibility of employing the all-purpose staff officer in logistics staff appointments.

LOGISTICS AS A STAFF FUNCTION

Administration from the staff point-of-view includes the activities of personnel management and logistics. Logistics is often considered to be a technical specialty, therefore it would be undesirable to allow staff officers to specialize in such a relatively narrow field, because it would have a divisive effect on the staff as a whole.

However, logistics is not a technical specialty, and it is certainly not a narrow field.

The logistics staff officer blends many separate technical functions for "the purpose of creating and supporting combat forces which are responsive to the needs of command". (1) Each functional category has its own technical staff specialist who is interested in improving the performance of his particular function. The logistics staff officer combines the variety of specialized functions in the most efficient way possible to assist the commander in the accomplishment of his mission. (2) He cannot work in a water-tight compartment, because tactical and strategic considerations are fundamental to the planning and direction of logistical activities. In essence the logistics staff officer must have a command viewpoint.

PRESENT DEVELOPMENT OF LOGISTICS STAFF OFFICERS

Admiral HE Eccles, in his authoritative book, "Logistics in the National Defence", states the following qualifications for the officer in a logistics staff position:

> "Professional knowledge is essential. The person charged with assisting the commander in the exercise of logistic co-ordination must have a knowledge of war as a whole. He must have a good knowledge of strategy, a thorough knowledge of logistics, and enough knowledge of tactics to recognize the logistical implications of tactical events and developments". (3)

Is the Canadian Army developing officers to ensure they have the desirable qualities for logistics staff employment? The answer to this question can be attempted by examining the logistics training and experience a typical arms officer acquires during his regimental experience, staff training, and logistics staff employment.

As a regimental officer the burdens and rituals of peace-time administration are impressed upon him during his day-to-day activities. During his studies for promotion examinations he learns the rituals of administration in the field. The overall impression received is the constraining inflexibility of administration. The only bright spot is his learning of the five principles of administration.

It will probably be several years before he ever sets foot in a typical service unit to see how it operates. To him, logistics units will probably always seem to be large and cumbersome, considering how little they appear to have to do.

At Staff College the familiar principles of administration are imbedded. The five words: foresight, economy, flexibility, simplicity, and co-operation, are acclaimed the panacea for logistics in the nuclear age. He studies the rituals of staff tables, movement graphs and administrative orders. He has a small advantage if he knows how to use a slide-rule.

He meets and works with several service officers and discovers that, as a group, they are not as dull as he might once have suspected. Why a service officer learns some of the finer points required of a good "G" staff officer doesn't make much sense to him.

Once appointed to a logistics staff position, such as the DAA&QMG of an infantry brigade group, he learns a considerable amount about the service units during his daily activities. His specialist service advisers are invaluable to him – without them he could not operate.

How much he benefits from such a position will depend to a great extent on how deep an interest he takes in his job. In all probability he would rather be in an operational or "G" staff appointment. However, he realizes that a logistics appointment is necessary to ensure he is a well-rounded officer. He will probably do a creditable job, but nothing extraordinary.

Is the staff-trained service officer any better prepared than an arms officer for a logistics staff appointment? His initial experiences with logistics is very similar to the arms officer, except he will have participated in the operation of a logistics unit. He probably has a good idea how the other logistic services operate, because of their usual proximity to each other and their need to work together on occasions to achieve a common goal.

He receives considerable theoretical training in the operation of the various arms units during his promotion examination preparations. He may also spend some time with an arms unit performing one of the specialist technical jobs in the unit.

At Staff College he becomes a reasonably rounded officer. He learns the fine points in tactics and operations and how to do a detailed fire plan. He wonders why his training appears to be designed to make him a "G" staff officer when he knows it is very unlikely that he'll ever fill an operations staff appointment. Most likely his extra-curricular reading and study take him into the field of logistics. He hopes for a logistics staff appointment when he finishes Staff College, because this is his way of life.

If a logistics staff appointment was available to him he would very likely get something out of it. Perhaps more important, he may be interested in contributing to the science of logistics.

Because of his experience, interests, and knowledge of logistics, the staff-trained service officer is closer to Admiral Eccle's ideal logistics staff officer than the staff-trained arms officer. How much closer depends largely on the individual's personal effort to try to learn more about the vast and complicated field of logistics. If he is able to break the bonds of his ritualistic logistics training, he has a chance of approaching the ideal. However, the ideal is beyond reach unless he gains experience in logistics staff employment at ever-increasing levels of responsibility.

SERVICE OFFICERS AS SECOND-CLASS CITIZENS

Logistics staff positions are very often closed to service officers because of the Army's desire to use these positions as logistical training grounds for arms officers. All operations staff positions are understandably closed to the service officer. With one avenue of staff development closed and the other severely curtailed, the service officer does not have the same opportunity to develop as does his brother officer in the arms. The high proportion of arms officers attending staff colleges lends support to this view. At Camberley in 1958, 89 per cent of British officers were from the arms. In 1964, at the Canadian Army Staff College, 77 per cent of the Canadian officers are from the arms.

At first glance it is difficult to understand why service officers have been much less acceptable than arms officers for logistics staff appointments. To the uninformed it probably seems ridiculous that the staff direction and co-ordination of the various technical services should usually be the job of an officer who has had minimal training and experience in the logistics field. The only point in his favour is that he understands the consumer's point of view because of his previous experience in an arms unit. The value of this point is very often overrated.

The relatively lower acceptability of the service officer can be explained by examining the recent history of the British staff. There still exists the traditional snobbery which causes many arms officers to look down upon the activities of logistics and to consider logistics personnel as second-class citizens in the army hierarchy. There is a strong tendency to think that officers and men of less capacity are adequate to these "subordinate" auxiliary tasks.[4]

This traditional lack of respect generates and sustains lack of confidence in service officers. It can be attributed largely to the difficult administrative situation prevailing in the British Army of the last half of the 19th century. It was the administrative fiasco in the Crimean War which caused the establishment of the Staff College at Camberley in 1858.[5] For the first time the subject of military administration was included in an officer's training.

In the Crimea the relationship between the combatants and the supply services was very poor. The officials of the commissariat were civilians hired for the period of hostilities. Their social status was below that of officers. An undesirable barrier was maintained between the combatant and non-combatant.[6] The Commissary was regarded with contempt and suspicion and his work was generally despised by the officers, perhaps with much justification. The present attitudes to service officers were created in this way over 100 years ago.

Supply officers were not considered essential to the staff in the Boer War. As a result there was little real liaison between the staff and the supply officer.

A considerable advance had been made by World War 1. Representatives of the supply services were made available to the staffs at all formations from brigade upwards.[7] Officers from the services had been allowed in on the fringes of the staff but only to advise in their particular technical specialty. Staff direction and co-ordination of the logistics services remained firmly in the hands of arms officers. The arms had not forgotten the supply mess in the Crimea. Only staff supervision by arms officers could ensure that the services functioned to meet the needs of the fighting man. Fifty years later this philosophy is still firmly with us and, unfortunately, is part of our staff tradition.

Today service officers are beginning to be accepted into logistics staff appointments. However, there is considerable resistance because many arms officers don't admit that a service officer can develop a command viewpoint. From this misconception springs the sincere desire of arms officers to direct and co-ordinate the logistics services.

POOR MOTIVATION AND ITS EFFECTS

Are arms officers really interested in logistics staff appointments? To identify areas of interest for staff employment the 79 Canadian Army students of the 1963-65 course at the Canadian Army Staff College were asked to select the captain and major staff appointments they would prefer in the headquarters of a typical brigade group. As expected, the results showed the following preferences:

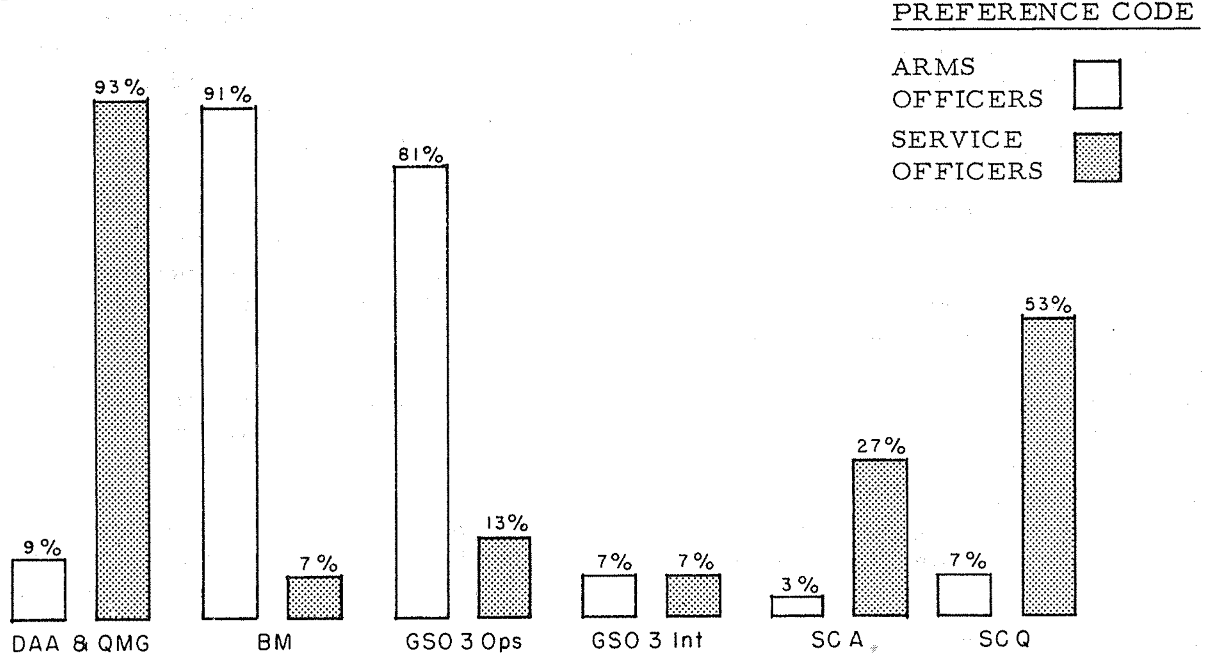
Arms Officers (58 replies)

BM	- 91%	DAA&QMG	- 9%
GSO 3 Operations	- 81%	Staff Captain A	- 3%
GSO 3 Intelligence	- 7%	Staff Captain Q	- 7%

Service Officers (15 replies)

BM	- 7%	DAA&QMG	- 93%
GSO 3 Operations	- 13%	Staff Captain A	- 27%
GSO 3 Intelligence	- 7%	Staff Captain Q	- 53%

Graphically, the results look like this:



Such a survey has many limitations, but it provides enough evidence to confirm the belief that the Army has two kinds of officers, each orientated towards his own field of knowledge, experience, and interest.

One of the arms officers who specified the logistics appointments explained he did so because he wanted to learn something about logistics. He felt that since logistics is an all-arms responsibility he should know something about it.

The wisdom of employing arms officers in logistics staff appointments, in which they have little real interest, is open to considerable doubt. It does add to their personal development, but it is suspected that the cost is high because they lack the motivation and the knowledge to make significant contributions to the science of logistics.

Motivation is considered by psychologists to be a major factor in the level of performance achieved by an individual. Interest in a particular field will greatly influence the extent to which one will apply his ability.[8] Also, the desire of an individual to learn more about a particular field is directly related to his interest in it.

An individual's intention to learn is considered to have a direct relationship to his flexibility of mind. If he withholds the effort and relies upon habitual ways, his thinking becomes stereotyped to the detriment of further development.[9] If the field of logistics is examined in this light, it perhaps becomes apparent why the conduct of logistical activities has changed little since World War 1 despite the military technological revolution which has taken place in the past 50 years.

The Army has only reluctantly accepted the impact of technology, and as a result the impact has been painful indeed. Logistics has not yet been given its proper place within the staff. For example; it remains married to personnel administration in the staff positions of the AA&QMG and the DAA&QMG, and it is clearly outside the hierarchy of the General Staff.

By comparison, the Air Force, born in the age of technology, unhampered by the traditional distrust of supply services, has developed a simple, three-pronged staff organization at all levels, ie, operations, personnel and logistics. This organization meets the requirements created by the modern, complex machines of war.

The Army's approach to the problem of increasing technology has been to retain the staff structure designed to utilize men. As a result the requirements of the complex machines of war have not been fully appreciated by all officers of the Army.

Because the demands of the new technology are felt largely in the logistics system, it is essential that properly trained, oriented and well-motivated officers fill the logistics staff appointments.

The continued attempts of officers to exercise control over the functions of logistics without a clear understanding of its characteristics, and the forces which influence its behaviour will result in frustration and waste.[10] The logistics staff officer in such a position depends more and more on his technical advisers to solve the problems which he himself should deal with. He either accepts the advice of his specialist adviser with quiet complaisance or rejects it, depending on his mood and degree of uncertainty. Under these circumstances, the overall logistics effort must continue to suffer to the detriment of the effectiveness of the combat forces.

TWO KINDS OF OFFICERS

The organization of the Army is designed to achieve the destruction of the enemy. The operation of the combat forces to achieve this mission is the task of the arms officer. The task of the logistics officer is to ensure the effectiveness of the combat forces by providing logistics support. The activities of these two kinds of officers are quite different. The work of the arms officer is organized destruction while that of the service officer is preservative, restorative and creative.[11]

In the modern army both tasks have taken on extreme complexity. The speed and magnitude of military operations will make vastly greater demands on the commanders and staffs at all levels. The likelihood has diminished of finding officers who have the knowledge and skills to be proficient in both fields of logistics and operations. In modern civilian enterprises, where the technological impact has also been tremendous, special qualifications are now usually needed to direct organizations with specialized functions.[12]

The Army has already created two types of officers. From the moment that a young officer-cadet selects his corps he is typed for the rest of his career as an arms officer or a service officer. Since the arms officer is operations oriented and the service officer is logistics oriented, it is logical to develop each officer to his full potential in his own field. This would ensure that each officer will have the opportunity to develop the great flexibility of mind which is an absolute requirement in the modern military leader.

So far as the logistics field is concerned the greatest benefit would be realized by having well-motivated officers in logistics staff positions. They would be in a position to make some badly needed contributions to the science of logistics in war and peace.

The operation of logistics units and technical services would improve because the command point of view would be infused by officers with logistics staff training and staff experience who return to their technical services for employment.

Capable logistics staffs and more efficient logistics units are the best ways to effectively control the evergrowing 'logistics snowball' demanded by the means and methods of modern war.

TRAINING OF THE LOGISTICS STAFF OFFICER

A new approach to the study of logistics is needed. The ritualistic approach has been with the Army too long, and it is unsuited for the concept of future operations. If the future logistics staff officer is to be creative he must thoroughly understand the fundamentals of logistics. The learning by rote of procedures and organization charts, while useful in itself, does not impart an understanding of the fundamentals involved.

As a first step in logistics staff training it is imperative that well-motivated officers of high calibre be trained especially for logistics staff employment. This logistics staff training should be conducted at the Staff College, because it is essential that operational and logistical doctrine is integrated. Arms and service officers prior to entering the Staff College would select either the operational option or the logistics option. Much of the training would be common to both options. However, extensive training and study in each option would be carried out. The program would be designed so that the two avenues of staff training are dove-tailed. Exercises could be conducted with officers of both options playing the exercise roles for which they are being trained.

There would be many benefits from training both types of staff officers under one roof.

Perhaps the most important one would be that the logistics staff officer would retain the needed dignity of the Staff College.

OBJECTIONS

Two possible objections to the proposal that service officers should be specially trained for logistics staff appointments are:

a. The service officer will not be able to develop the command viewpoint required because of his background in one specialized technical skill.

b. Logistics staff appointments must be reserved for arms officers so that they may gain the experience necessary to advance to high command.

The first objection can be discussed as it applies in a comparable situation in civilian industry. Koontz and O'Donnell in their book, "Principles of Management", discuss the question of a technical operating skill being a handicap to a manager.(13) They feel that the evidence points in both directions. On the one hand, time spent practising a specialty for a long period of time, ie, ten to twenty years, tends to narrow one's outlook. On the other hand, technical competence often gives a person a position of prominence and respect in a group, thus augmenting his leadership abilities. The authors do consider it essential that a person in authority over technical advisers be familiar with their potential and understand the role of each skill and their inter-relationship.

It is unlikely that a young staff-trained service officer has got himself into the rut of a technical specialty, because he will not have spent that much time employed in his specialty. In addition, his staff training will ensure that his outlook is not a narrow one.

The second objection implies that the arms officers who is a commander must have enough logistics staff background to know just when his logistics staff is trying to pull the wool over his eyes to the detriment of his combat mission. The heart of this objection is the traditional lack of confidence in logistics personnel.

If logistics staff personnel are trained, experienced, and mission-oriented, their performance will gain them the confidence of their commander. He must have full confidence in their abilities if he is to devote his full energies to the operational situation.

CONCLUSION

The Army has a large number of officers in the logistics services who are denied the opportunity to develop fully because logistics staff appointments are used to give arms officers experience in logistics. The arms officers have little real interest in this field, and as a result the efficiency of the Army's logistic support has suffered for many years.

The modern Army is too complex to adequately prepare an officer for staff and command in both the fields of operations and logistics. Since there are already two types of officers, each orientated and motivated to the field of either operations or logistics, it is essential that both the arms officer and the service officer develop fully within their own fields of endeavour. Employing staff officers in the right fields to the best of their abilities will ensure the maximum combat effectiveness of the Army.

FOOTNOTES

(1) Henry Eccles, Logistics in the National Defence (Harrisburg, 1959), p 9.

(2) Ibid; p 52.

(3) Ibid; p 358.

(4) Ibid; p VI. Foreward by Henry M Wriston.

(5) Lt Colonel FW Young, The Story of Staff College 1858-1958 (Aldershot, 1958), Foreward by Field Marshall Sir Gerald Templer.

(6) Lt Colonel GC Shaw, Supply in Modern Warfare (London, 1938), p 23.

(7) Ibid; p 128.

(8) SNF Chant and EI Signori, Interpretive Psychology (Toronto, 1957), p 220.

(9) Ibid; p 138.

(10) Eccles, p 225.

(11) Shaw, p 214.

(12) Chant, p 112.

(13) Harold Koontz and Cyril O'Donnell, Principles of Management (New York, 1959), p 44.

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STORY WITHOUT A TITLE

(No names no pack drill)

Not long ago an impromptu meeting took place in a certain RCEME Workshop. At one point in the conversation, the problem of ensuring that the Bulletin is seen by all ranks of RCEME came under discussion. The visitor sought to emphasize the importance of the wide distribution of available copies, and the difficulty of achieving this distribution because some people were apparently hoarding copies. The host officer nodded understandingly, and interjected sounds of approval and dismay at suitable points in the tirade. After expressions of agreement on the undesirability of "Bulletin-hoarding", the talk turned to other matters.

A few minutes later the host officer wanted to quote from an article about the subject under discussion which had appeared in a recent issue of the Bulletin. He got up from his chair, fumbled in his pocket and brought out a bunch of keys, unlocked a cupboard, dug down to the bottom, and unearthed copies of the last six or seven issues. It was with a rather sheepish smile that he placed his hoard on the desk.

Are you a "Bulletin-hoarder"? How many people have seen your copy?

IS OUR MANAGEMENT TRAINING EFFECTIVE ?

By Ssgt P Johnson

In the April '65 issue a "sales-pitch" for Management Company was published in which it was stated that a questionnaire would be circulated to all graduates of RCEME School Management Courses, "in the near future". That was almost a year ago, and one wonders what period of time is denoted by the phrase, "in the near future". What happened to the questionnaire? Has it been forgotten?

Actually, the delay in its appearance should have had one beneficial result; it should have enabled people to make extensive observations and give the matter some serious thought before being asked to make their comments; and perhaps this was the intention. However, just in case it has been forgotten, here are a few unsolicited comments to "stir the pot".

It should be said at once that the Management Course itself is extremely interesting and informative. It is no exaggeration to say that it is one of the best prepared, best conducted courses in the School. That it consists almost wholly of collected and codified "common sense", detracts not a whit from its interest and value as a course.

But "the proof of the pudding is in the eating", and while the Management Course "pudding" looks good, it appears doubtful whether, from the point of view of the man with a tool-box, it has displayed many other more useful qualities up to this time. In fact, evidence of the practical effectiveness of management training is very thin considering that it is the result of ten years' work.

Time Accounting is probably the most widely known RCEME application of management training. But how accurate is this form of Work Measurement in view of the "padding" which, like it or not, does occur, and the variations in working environment among the different shops involved; and how valuable is it to the man on the shop floor? Work Measurement is a management tool, an aid to the improved planning, co-ordination and control of production units. It provides a yardstick of human effort, reliable indices for labour performance, a basis for labour cost control and incentive schemes. In other words, it tells management what the average worker has achieved, and should achieve, under prevailing conditions, and assists in determining the most efficient combination of workers and machinery to achieve a desired result.

What it does not do is show the individual worker how to improve his own production methods. That is a function of Method Study. In addition to showing management how to improve the design of equipment and the layout of factory and workshop to create a better working environment and reduce worker fatigue, Method Study can show the individual worker how to use his equipment to better advantage and how to improve the layout of his own workplace. In big ways and small it can reduce his "lost time", decrease the number of movements which he makes, increase his knowledge and use of special tools, and generally improve his efficiency and trades ability, to his advantage. It can justify changes against mere prejudiced opposition, and it can do all these things in any unit, large or small, in any location.

Yet how often is a Method Study carried out in the average unit? How many graduates of the course even remember what the Method Study Check Sheet looks like, never mind how to use it? In view of the benefits to be derived from Method Study, why has more use not been made of it?

It is certainly not from lack of scope. With respect to working efficiency, the MT, gun-mech, electrical and tels tool-boxes are as cluttered as Fibber McGee's Closet. A cursory glance around various RCEME workshops and specially equipped vehicles suggests that a lot of the test equipment has been installed on the jig-saw puzzle principle – if it fits, put it there! Just these two small fields involve a tremendous total amount of wasted time and wasted effort. On another tack, how many "turned-down" 97-1's would have gone through had they been supported by the results of a Method Study, and how many would never have got out of the section or unit? How many other applications of Method Study are there which have been neither mentioned here nor explored in practice?

It may be that the statements made here do not reflect the entire truth. It may be that branches of the course not mentioned here have borne more fruit. It may even be that the Work Study branch has borne more fruit than is obvious to the casual observer. But with the single exception of one item in the Bulletin in June 61, Management Method Study by S sgt HR Jones, there has been no publicity given to any unit level utilization of Management Training.

There has been lots of theoretical discussions on the subject, but very little evidence of its practical use.

Is this because there has been no utilization of it? If this is the case, then despite their efforts, the personnel of Management Company have failed to achieve their aim, they have failed to get the point across. They have failed to convince the many graduates that Management Training has a practical value at every level within the Corps!

Over to you...

(The questionnaire referred to has not been forgotten. However, changes in training organization and channels of communication which have been authorized or are pending, have made it advisable to delay its circulation.

-Editor)

NORTHROP F-5 AIRCRAFT FOR CANADA

The Government has approved the procurement of the Northrop F-5 aircraft for the Canadian Forces. Built to Canadian specifications, the aircraft will be called the "CF-5". The multi-purpose aircraft will be used primarily in the role of tactical support of ground forces and as such will be a new plane for a new role.

Within the five-year re-equipment program for the Canadian Forces, $215 million has been earmarked for the acquisition of approximately 125 tactical aircraft as outlined in the White Paper on Defence. The budget for the improved Canadian version of the F-5, which will have among other features, more powerful engines and an inflight refuelling capability, includes the necessary spares and support equipment for the aircraft to carry out its mission.

As they are formed, the CF-5 squadrons will be incorporated into Mobile Command, which will be responsible for maintaining combat-ready integrated land and tactical air elements capable of rapid deployment in a wide range of contingencies, as required by Canadian foreign policy.

Most of the CF-5's will be single-seat aircraft but a portion will be two-seat machines, to be used as trainers. A feature of the two-seat version is that it will be capable of immediate use in a combat role if required.

The CF-5 will be powered by two J85-15 jet engines, each with a thrust of 4300 pounds, and capable of providing speeds up to 1000 miles per hour. The aircraft will have good manoeuvrability and will be able to land on and take off from sod fields or unprepared runways, and will have good single-engine performance.

Depending on the mission, the CF-5 can carry a wide range of conventional weapons – 20-mm guns, missiles, rockets and bombs.

Other features include exceptional flight stability, low fuel consumption, low maintenance and training costs, wide availability of spare parts and a very low attrition rate.

Its range will be approximately 1500 miles; 2500 miles with in-flight refuelling. Included in the program is provision for in-flight refuelling.

The CF-5's agility, weapons mix, speed, ease of maintenance and versatile conventional (non-nuclear) capability made this aircraft the logical selection for the new "Global-Mobile" role of the Canadian Forces.

CANADIAN MANUFACTURE

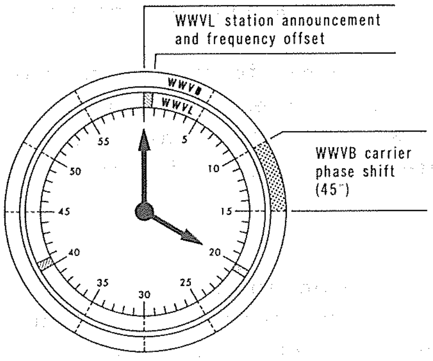
Airframes and assembly will be done at Canadair Limited, Montreal. Engines will be manufactured at the Orenda Division of Hawker Siddeley of Canada Limited, Toronto.

-The Canadian Military Journal

NBS STANDARD FREQUENCY AND TIME BROADCAST SCHEDULES

The diagrams presented here, with explanatory notes, summarize the standard frequency and time services provided by the National Bureau of Standards radio stations WWV, WWVH, WWVB, and WWVL.

HOURLY SCHEDULES OF WWVB AND WWVL


WWVL station announcement and frequency offset
WWVB
WWVL
WWVB carrier phase shift (45°)
55
5
50
10
45
15
40
20
35
30
25

WWVB (Carrier: 60 kHz): Station is identified by 45° advance in carrier phase starting at 10 minutes after each hour and returning to normal at 15 minutes after each hour. Time is disseminated continuously by amplitude modulation of carrier level with once-per-second pulses. Modulation consists of 10-dB drop in carrier level during a pulse. Width of pulses carries time information in special "WWVB" format. Each time frame, which includes UT2 corrections, lasts 1 minute. Note: WWVB carrier frequency is now maintained without offset with respect to United States Frequency Standard.

WWVL (Carrier: 20 kHz): Program is experimental and subject to change. At present, WWVL broadcasts continuously and is identified in Morse code on 1st, 21st, and 41st minute of each hour by station call letters, repeated 3 times, followed by frequency offset. Code is produced by "on-off" carrier keying. WWVL carrier has −150 parts in 10^{10} offset with respect to United States Frequency Standard.

TIME PULSE ADJUSTMENTS

The National Bureau of Standards has announced that the clock which controls the 1-second time pulses from standard broadcast station WWVB (60 kHz) was retarded by 200 millisec on Oct. 1, 1965. This change is in keeping with the previously-announced policy of maintaining the WWVB time pulses within 100 ms of the UT2 time scale (the period between the WWVB time pulses is 150 parts in 10^{10} shorter than the period between UT2 seconds, a difference of 0.0013 second/day). The WWVB time pulses have already been retarded 200 msec on each of three occasions during 1965, on Jan. 1, April 1, and July 1.

There were no changes in the phases of time pulses of NBS high-frequency stations WWV and WWVH on Oct. 1, 1965. Retardations of 100 ms each were made on Jan. 1, Mar. 1, Jul. 1, and Sept. 1, 1965.

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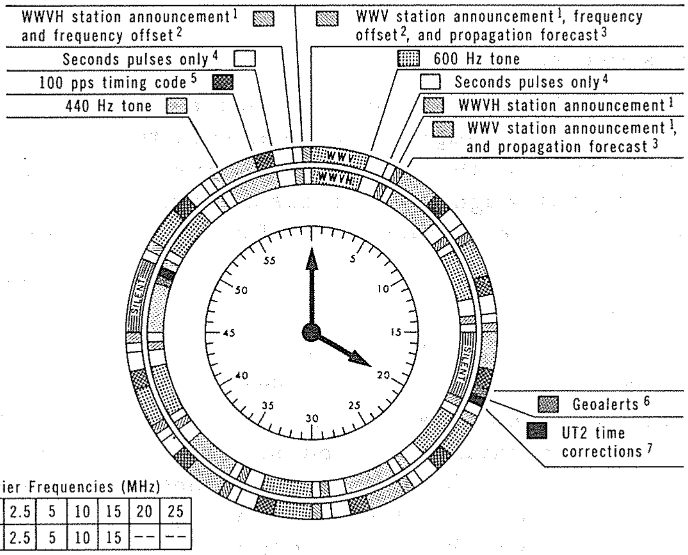
WWVH station announcement[1] and frequency offset[2] ▨
Seconds pulses only[4] ☐
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WWV
WWVH
SILENT
SILENT
55
5
50
10
45
15
40
20
35
30
25
▨ Geoalerts[6]
■ UT2 time corrections[7]

Carrier Frequencies (MHz)

WWV	2.5	5	10	15	20	25
WWVH	2.5	5	10	15	--	--

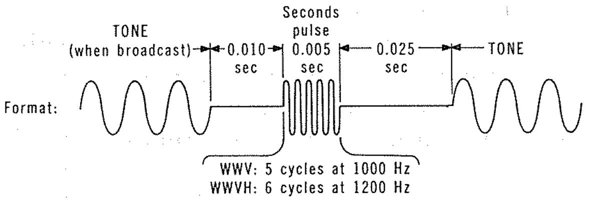
1. Call letters and Universal time in Morse code; call letters and Eastern Standard time (WWV) or Hawaiian Standard time (WWVH) by voice.
2. Frequency offset: amount in parts in 10^{10} by which transmitted frequencies are offset from U. S. Frequency Standard; broadcast in fast Morse code immediately following voice announcement on the hour only. Symbols now transmitted are M150, meaning minus 150 parts in 10^{10}.
3. Propagation forecast (WWV only): condition of ionosphere in North Atlantic area, at time of last issue, and radio quality expected in subsequent 6-hour period (forecasts issued at 0500, 1200 — 1100 in summer — 1700 and 2300 UT). Letter portion identifies radio quality at time of forecast and numbered portion is forecast of expected quality on typical North Atlantic path during 6-hour period following forecast, according to following scale:

Disturbed grades (W)	Unsettled grade (U)	Normal grades (N)
1. useless	5. fair	6. fair-to-good
2. very poor		7. good
3. poor		8. very good
4. poor-to-fair		9. excellent

4. Seconds pulses are transmitted continuously except for 59th second of each minute and during silent periods. Each minute starts with two pulses spaced by 0.1 second.
5. 100 pps timing code: binary-coded 1000-Hz tone gives Universal Time in seconds, minutes, hours, and day of year for use as unambiguous time base during data recording in scientific experiments. Format used is NASA 36-bit Time Code with 2-ms pulse for "0" and 6 ms pulse for "1." Each frame lasts 1 second, repeated once per second during 1-minute broadcast interval.
6. Geoalerts: slow Morse code to identify days on which outstanding solar or geophysical events are expected or have occurred during previous 24 hours. Geoalert is identified by letters "GEO" followed by one of following letters repeated five times:

M — Magnetic storm
N — Magnetic quiet
S — Solar activity
Q — Solar quiet
C — Cosmic ray event
W — Stratospheric warming
E — No geoalert issued

7. UT2 time corrections: corrections to be applied to time signals for obtaining actual UT2 time within ±3 ms. Corrections, in Morse code, begin with "UT2" followed by either "AD" (for add) or "SU" (for subtract) in turn followed by number of milliseconds to be added or subtracted from time as broadcast.



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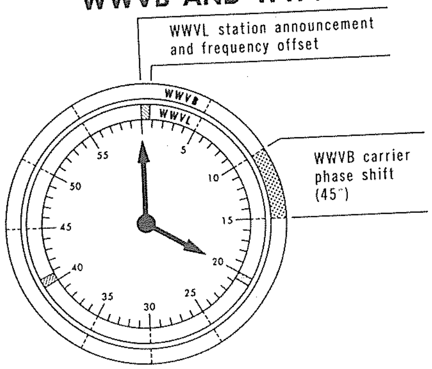
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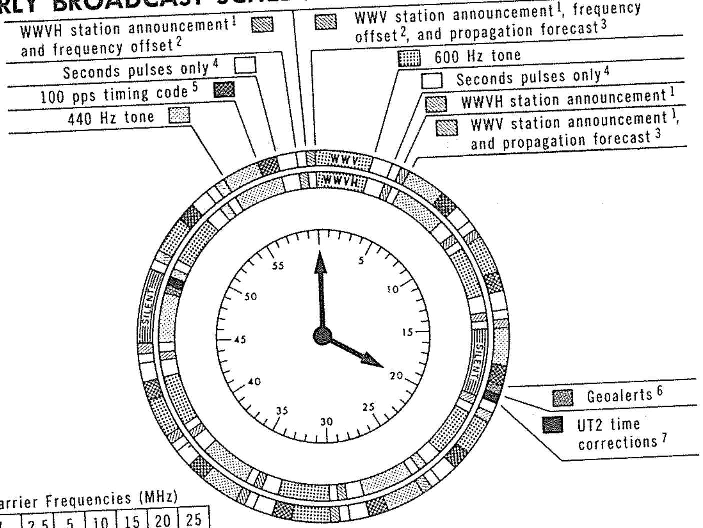
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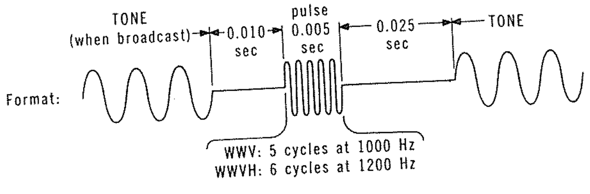


PIECES OF PAPER

It is easy to think of paper as being cheap, but paper processed by many hands is very expensive.

What has Happened

A handful of paper is, in many office corridors, a sort of badge, on a level with the black rod carried by the Gentleman Usher when he progresses through the galleries of Parliament to summon the Commons to the Red Chamber.

How to Cope

In a real sense, forms, records and paperwork are the sole office product. They become troublesome when office workers leap to the conclusion that increased output of papers is an indication of efficiency. It must not be thought that the bureaucrat exists only in government offices, with his ambition to make two pieces of paper sprout where only one grew before.

There is a growing and justifiable impatience of multiplying the filling in of forms. One survey showed that about one-third of the records kept by the average business could be thrown out without impairing operations in the slightest degree. These useless records cost money, measured in terms of paper, filing space, equipment, and clerical servicing.

When tidying up the accumulation, and when starting a new form, ask: "Can this be eliminated? Can it be combined? Can it be simplified?"

Designing Forms

What to put on your form is something peculiar to your business, not governed by a rule book, but there are some basic features in forms design that will save money. A form should call for a specific kind of information, no more and no less than required. It should make the information easy to enter and easy to use. It should be produced as cheaply as possible having regard to the use for which it is intended. It should be simple, so as to reduce errors.

The form should be as nearly self-explanatory as possible. Separate instructions are likely to be lost. Captions and item headings, in familiar words, guide every user. The type should be legible. Eccentric spacing and hard-to-read type act as brakes on working momentum.

A well designed form has functional beauty. When it has a pleasing balance in its pattern elements, legible type, and a good allowance of white space, the eye is guided rather than irritated.

Memoranda

The written memorandum is a great timesaver. The writer can marshal his thoughts so as to put what he wants to say into the most concise form, and the reader can give attention to the memo at a time when he is free from distractions.

But memoranda are agents of activity. Copies "For your information", sometimes abbreviated to "FYI", should be vetted. Don't send out copies except to the people who are or should be directly concerned with the subject-matter.

There would be time- and dollar-saving eliminations if everyone asked everyone else just what he wished to see, and if those who received unwanted copies returned them with a note asking for removal from the circulation list.

As to the writing of memos, here is a small formula to make them dynamic, effective and brief: keep every point in your statement logical; cover the facts and points required, but no more. Write clearly.

Office Practice

All office work is done in sequence, and for this reason desks should be so placed as to facilitate the flow of work so that papers move as nearly as possible in a straight line.

Precision of thought and action should guide the treatment of every sheet of paper at every desk. An incompetent employee may be seen rearranging things with inattention and indecision, so that at the end of half an hour she has moved nothing ahead. A skilled employee tries not to handle pieces of paper twice when once will do. Whatever she picks up prompts the instinctive question: "Now that I have touched this, where shall I put it so that the next step will be taken by the right person without unnecessary handling?" She will not fold anything, but will keep it flat until it has been attended to.

Paper-handling Machines

It is estimated that it costs about fifty cents for a typist to re-type a page of ordinary copy; a copying machine can do it for ten cents or less, perfectly, with no time lost in checking.

Look the Situation Over

Look at the papers being shuffled from desk to desk. Are they all necessary? It is so easy to ask for a new statistic, to institute a new form, to make extra copies "just in case". There is an apparently inexhaustible demand for data: make sure that it is needed data, and not just an array of figures that will remain unread except by the girls who type it.

"Discrimination" is a good word. It may be better to be annoyed two or three times a year by not finding something you wish to refer to than to be annoyed all year long by space-filling files that require a professor of library science to keep in order and a sleuth to find anything in them.

It is no longer possible to get rid of obsolete paper by tearing it up and showering it on parading heroes. Today's offices have windows that do not open.

If you remain devoted to paperwork you lose your initiative. You find yourself dealing with things brought to your notice, having ceased to notice anything yourself. You have, as Parkinson says, been essentially defeated by your job.

There is something to be said for those who, finding themselves in that danger, have taken time out to laugh at the absurd situation. One man suggested that termites and bookworms might be cultivated and turned loose in files and cartons of papers more than five years old. These insect pests thrive on cellulose, wood-pulp and paper. There may come a time when business men, politicians and bureaucrats, not having thought of a better way to rid themselves of the paper burden, will keep stables of termites to eat their words.

-The Royal Bank of Canada Monthly Letter

CENTRAL COMMAND GOLF - 1965

By Maj BM Deibert, CD

On 13 Sep 65, under overcast skies, the second Annual RCEME Central Command Golf Tournament was held at Camp Borden. There were 41 entries from RCEME units throughout the Command. The rain held off and, despite the dull skies, it was good golfing weather.

Cpl Jim Hill, from 4 Fd Wksp, Camp Petawawa, was the big winner with a gross score of 85. He was here for the Camp Borden Invitational on 11 and 12 Sep, and was actually a post entry in the RCEME tournament. S sgt Bill Leach, from 14 Coy RCEME, Camp Borden, tied Cpl Hill, and it was necessary to back track to the 13th hole to determine the winner. S sgt Leach was, therefore, the second low gross winner. The Calloway system was used to determine net scores. Two novice golfers, WO 2 Fred Atwood and Cpl R Crawford from 14 Coy RCEME took first and second prizes in that department. We hope this system will attract more novice and occasional golfers in future. We had six guests in the tournament, and prizes were also awarded to them. Maj Fraser from 43 COR took the guest low gross, and Mr King from 14 Coy RCEME took low net.

Cpl Hill was presented with the 14 Coy RCEME Trophy for low gross, and WO 2 Atwood received the Ted Brignell Trophy for low net. Twenty-six good prizes were handed out.

At the conclusion of presentations, the Command EME, Lt Col Robinson, thanked 14 Coy RCEME for putting on the tournament. He offered his full support for next year and promised to help spread the word when tournament time rolls round again. We sincerely hope the attendance will soar next year. A splendid fried chicken supper helped wind up the affair in grand style.

Our thanks go out to the Tournament Committee for organizing and handling this so competently. Committee members were: Lt DL Clarke, Chairman; WO 1 V Leonard, Starter; S sgt W Leach and WO 2 J McElroy, Prizes; S sgt K Gourlay, Reception.

2208, WHAT'S THAT ?

By

Capt DB Perrin

Not too long after having arrived at the glorious Second Regiment the author had established himself at what he considered his proper place in the Officers' Mess, at the bar. Whilst engaging in light conversation with several of his new-found cohorts the subject of vehicle inspections and CAFC 2208 forms came up. We had not been on the subject too long when a battery commander approached the select group and asked the question, "2208, what's that?"

After a suitable period of artificial respiration I regained consciousness and was helped into an overstuffed chair for a brief period of recovery. After having been fortified with another scotch and water I was able to stand on my feet, and I resumed my usual stance at my allotted place at the bar. Conversation roamed through the usual range of bar topics, and in deference to my weakened condition the subject of 2208's had been delicately set aside.

The next day at the office I came to the realization that what our unit officers needed was a quick education in normal RCEME day-to-day operations, including vehicle inspections. A glance at the last Annual MTI file and the current vehicle maintenance state indicated that the vehicle maintenance effort of the Regiment was poor. Here then was as good a place as any to start my educational program.

As I looked more deeply into the subject it did not take long to realize that the current system of maintenance and inspection was unsatisfactory. Not only were unit officers confused, but battery MT sections as well. Further, the system was costly in RCEME manpower, since each battery section employed mechanics on inspections. Many precious repair hours were being lost, and each section had a different inspection standard.

The answer appeared to be in the creation of a Regimental Inspection Section and an intensified program to educate MT sections in the latest maintenance techniques. By the use of simple mathematics it was determined that two men could handle all the inspections provided that a definite schedule was enforced. The answer to the problem of creating a more maintenance-conscious regiment would not be as simple.

For inspection purposes Lsgt George Bogden and Cfn Joe Lescadres were selected as the team. The selection was based on a careful study of all personnel and their capabilities with a view to ensuring an extremely high standard.

For purposes of fostering a greater interest in vehicle maintenance throughout the regiment it was decided to hold a maintenance competition. The regiment was divided into logical units of approximately equal vehicle strength. To ensure that the sixty-day time limit would be met each unit was required to produce five vehicles and their accompanying trailers for inspection each week. The trophy which had been provided by Captain KS Parton in 1954 while he was CO 2 RCHA LAD proved to be quite useful in providing added incentive to each competing section. It was decided that the trophy would be awarded to the section which maintained the highest maintenance grading over the period of one year. This grading would be calculated on the following basis:

50% for the average 2208 grading over the year, and
50% for the Annual MTI grading.

The sections which would compete would be:

Each battery MT;
Regimental Headquarters (including QM Stores, AOP Tp, and MT Pool), and the
RC Sig Tp attached to the Regiment.

Since each of these sections had its own MT office the onus of selecting the vehicles to be

Adjt
2 RCHA

MEMORANDUM

LMT/Inspections Vehicle

2 RCHA Maint Tp
31 Aug 65

Summary of Veh Insp
Period 22 Aug to 28 Aug 65

1. May the fol results be published in Unit Part I Orders, Notice Section:

Sub-Unit	Insp Date	Veh/Tlr Inspected	Last Grading	This Grading	Overall Grading	Standing
D	25 Aug	6/3	95.0	92.8	92.4	1
E	26 Aug	5/2	91.8	92.1	90.6	3
F	24 Aug	3/3	90.4	91.0	87.6	5
RHQ Tp	24-26 Aug	4/0	90.0	90.5	88.9	4
Sig Tp	23 Aug	3/1	88.6	92.5	91.7	2
Maint Tp	23 Aug	2/1	92.0	95.7	94.8	--

Regimental Average for 424 vehs and 169 tlrs = 90.6%

(Signed) DB Perrin Capt
Technical Adjutant

#21

Figure 1

inspected, and in which sequence, was placed squarely on the MT NCO's shoulders. This was to produce the feeling within the section that they were really "running their own show". Needless to say, vehicles which did not meet the sixty-day deadline were severely penalized in grading.

The results of each weekly inspection were published as an annex to Unit Part 1 Orders. Fig 1 shows the format currently in use. At the same time, a special Summary of Weekly Inspection was designed which tabulated each section's performance. (See Fig 2). To this summary the original copies of the weekly CAFC 2208's were attached. This was then passed through the office of the Second-in-Command to the sub-unit commander concerned. It was gratifying to note the keen interest of the Second-in-Command who, with his excellent command of the English language, appended appropriate remarks to each report.

Competition between sub-units became fierce, and all officers kept a close watch on reports and maintenance crews alike. Visits to the office of the Technical Adjutant became almost daily occurences, where inspection results were discussed at great lengths. "About our last 2208's..." became a common phrase used by personnel from the rank of major to gunner. If a summary was late in being published the Maintenance Troop office would be swamped with personnel anxious to know the results.

Had we achieved our aim? It appeared so but "the proof of the pudding is in the eating", and the Annual MTI was yet to come. The inspectors arrived like an army of ants, swarming over the entire countryside as far as the eye could see. The sight of the thousands of them reduced me to a mass of jelly. As they moved across the vehicle compound vehicles seemed to disappear from view. It was like the plague, nothing would be missed, and as the weeks went by the author could do nothing but stand at the sidelines and wait.

LETTERS

Sir:

In response to your request for RCEME Unit telephone numbers ours is 489-4511 local 219. Also as a new RCEME Unit we would like to be included on the Bulletin mailing list.

I am including an article from the Oct 1965 issue of Electronic World which may be of interest to many of your readers. The technique described in the article has been tried and found to be very successful. It has proven to be very helpful in removing components from the printed circuit boards used in the AN/PPS 4 Surveillance Radar.

S sgt G McIntyre
1 Loc Bty RCA Maint Sec

Thank you for your interest (and your phone number). You may be sure you'll get copies of the next (Jan 66) issue of the Bulletin.

Concerning the electronic clipping, this whole question is under study and an instruction will be prepared shortly. Our electrical experts say they would rather not tackle the subject piecemeal by publishing this procedure now.

-Editor

Sir:

I was interested to read Ssgt Johnson's well-written article in the October Technical Bulletin entitled "What is RCEME Anyway?".

I think, though, that it presents a somewhat incomplete picture of army maintenance and repair activities prior to 1944, the date of the formation of the RCEME. Actually, practically all of the functions of the new corps were already being quite well performed, from Base Workshops up to LADs. However, the direction of these units was in the hands of non-technical senior officers; to be precise, those of the RCOC. The Ordnance Mechanical Engineer was responsible to a supply or Ordnance Officer. The new principle proposed was that, for greater efficiency, maintenance and repair should be supported by a method of supply of spare parts and of new equipment, rather than the other way round. Likewise, it was felt that technical training should be completely in the hands of technically experienced and qualified persons.

It is always difficult to explain technical matters to a layman, military or otherwise. While such presentations must eventually be made at some level or another, the farther up and the fewer, the better.

Probably the foregoing points of view met with some degree of opposition. But these and maybe other arguments won the day, and the corps was born. Subsequent events have proved, I believe, the wisdom of the decisions taken at that time.

Oldster

NO PARTS CHANGER, HIM!

...In my own case, I can report that I had an experience almost as satisfying as observing the old-fashioned ritual of cutting my own Christmas tree. I discovered an old-fashioned garage mechanic!

He didn't wear a doctor's coat or even a stethescope. Just a pair of greasy old overalls. It was up near Gormley that the cursed red light came on on my dashboard to inform me that my generator had stopped functioning.

I must confess I wasn't very optimistic about finding a garage. But I did. And at the same time I found it, I also found that you don't have to travel so very far away from the city to encounter country politeness and sympathy.

A farmer had been standing waiting for his own car to be fixed. When he heard me describing my predicament, he casually said to the garage mechanic: "Don't bother about my car right now. I'm in no hurry." But what about his getting home for lunch? "I'll just hoof it," said he. "A little walk will do me good."

The mechanic then took off my generator, tore it apart, and went rooting through various junk boxes to find parts that might do. All the while he was uttering those satisfied little noises which (along with classic cussing when things aren't going right) provide the tell-tale sound of a first class mechanic.

As I drove away, with my generator working just fine, I tried to recall how long ago it was that a mechanic tried to fix something for me, instead of just tearing it off and throwing it away, replacing it with a new one.

--Bruce West in the Globe and Mail

SUGGESTION AWARDS

By GM Hellard

Mr Wilfred Robotham, a body repairman at the Workshop Branch, 27 Central Ordnance Depot, designed and manufactured a lock bracket to the vehicle tool box door of the Truck Ambulance, 3/4 Ton, 4x4, M43 Cdn, and Truck Panel, Utility, 3/4 Ton, 4x4, M152 Cdn, which resulted in maximum security.

This simple modification was easily applied and provided maximum security.

Prior to this, EME Manual Vehicles D 117, Instr 42, Issue 1 authorized the installation of a lock bracket to all models of Truck 3/4 Ton, 4x4, SMP but this was found to be applicable to the M37 only. The instruction could not be applied to the M43 Ambulance and M152 Panel because the tool box handles were the recessed, turn-down type. Many awkward, ineffective types of padlock attachment devices had been applied to the tool box door of these vehicles.

Mr Robotham's suggestion was evaluated by specialists at the Directorate of Equipment Engineering and was adopted. As a result, Issue 2 of EME Manual Vehicles D 117, Instr 42, was published authorizing the installation of this simple lock bracket to the vehicle tool box door of the M43 and M152.

Mr Robotham was given an award of $40.00 and was presented with a cheque and certificate of award by Maj HV Hann, CD, A/Chief Workshop Officer.

Mr Robotham came to the Workshop Branch in Oct 46 after being released from the Royal Canadian Navy. He holds dual qualifications as a painter and body repairman and is considered to be an excellent tradesman. He was employed in the Paint Shop from 1946 to 1954, at which time he was reclassified as a body repairman and since then has been employed at that trade.

Mr GH Beam, supervisor of the Fuel and Electrical Component Shop, Workshop Branch, 27 COD, submitted a suggestion to ease and improve the method of replacing the output receptacle, or connector, on the generators of the 1/4 Ton, 3/4 Ton, 2 1/2 Ton and 5 Ton SMP vehicles.

Previously, when replacing the output receptacle, the soldering operation required one man to pull the wires far enough out of the elbow to connect them to the receptacle terminal and to hold them there while allowing enough space for another man to do the actual soldering.

Mr Beam proposed that the wires be held in position with a large cotter pin which, when slipped over the wires, prevented them from retracting into the output elbow. This method was put into use in the Workshop Branch for several months and required only an expendable cotter key. It was found to be a practical method and the time saved per operation was approximately 15 minutes per unit.

This suggestion was appraised by the Directorate of Electrical and Mechanical Engineering and accepted for use.

Mr Beam was presented with a Certificate of Award and a cheque on 1 Nov 65 by Maj FG Johnson, Chief Workshop Officer.

During the Second World War, Mr Beam was employed in the repair and inspection of aircraft engines at No 4 Air Observer School, Crumlin, Ontario, part of the Commonwealth Air Training Plan. When the school closed, Mr Beam went to Ontario Motor Supplies in London and was employed there as foreman of the Automotive Machine Shop until 1954, at which time he came to the Workshop. Mr Beam has worked in a number of sections of the Workshop, and for the past eight years has been the supervisor of the Fuel and Electrical Component Shop.

Mr Beam has submitted other suggestions and is continually trying to conceive ideas

Maj HV Hann presenting Mr Robotham with the Certificate of Award and the cheque. DND photos

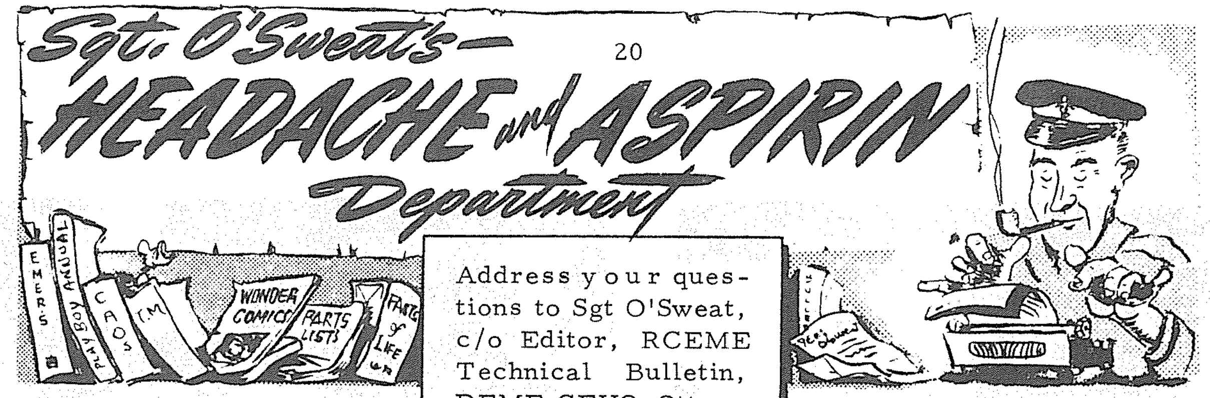
Maj FG Johnson presenting Mr Beam with Certificate of Award and cheque. Members of his section attending (l to r): JA Donahue and J Cragg.

SUGGESTIONS RECEIVED

The following suggestions have been submitted by military or civilian personnel in the Corps. Some will be adopted and many will be 'shot down' for various reasons. However, they are the best evidence that RCEME people are constantly using their heads.

These files were received in DEME during October to December. The publication of the particulars here does not in any way imply their acceptability.

Suggestor	Suggestion
Lt AD Tupper 27 COD Wksp Br	A protector over the oil cooler on Ferret Scout Cars
Ssgt E Goodman DEME	Increase of Milage/Time interval between oil and filter changes for recovery vehicles
Mr GH Beam 27 COD Wksp Br	Battery cable with cover as used with VM Slave starter
Cfn GG McClelland Cfn JSA Millen 213 Wksp	Jig to hold binocular prism clusters for cleaning and assembling
Mr RE Bickes 202 Base Wksp	Protective cap for fire extinguisher when removed from Centurion tank
Ssgt SV Hayden I Staff Cencom	Modification to Centurion tank magneto bearing
Ssgt RC Brimmage 2 Field Wksp	Replacement plastic case on magnetic compass C1B1, C1B2 and Mk 3



Address your questions to Sgt O'Sweat,
c/o Editor, RCEME
Technical Bulletin,
DEME CFHQ Ottawa

Dear Sgt O'Sweat:

I would like to pass along some suggestions for consideration.

One of our biggest problems in instruments is our EME Manuals. New instructions take a long time to get published; from what I understand of the procedures involved this is understandable. What I would suggest is that when an instruction is completed by MTS section it is published in a temporary form in the Technical Bulletin (tear out type).

Units could be requested to submit comments by a specified date; if any comments were received the instruction would be removed and published in a permanent form.

S sgt RC Brimmage

Dear S sgt Brimmage:

Your suggestion has some merit. The Technical Bulletin is one means of giving information to the field, if...

Unfortunately it's a big IF! Or rather, two IFs.

First IF: If the temporary instruction was ready to publish at the time the Tech Bulletin was due to appear - only once every three months - it might be feasible to include such temporary instructions.

Second IF: If the delay in publication occurred in the printing and distribution process - but this is not the case. When an instruction is ready for printing, it can be printed much quicker than a 40-page Technical Bulletin with all its extra camera work and binding.

Sgt O'Sweat

Dear Sgt O'Sweat:

Reference Mod Instruction S-149-1 referred to by S sgt RC Brimmage and answered by you in Volume 10, No 4 dated Oct 65.

Here at 7 Coy RCEME workshop in Camp Gagetown we have experienced trouble with No 2 Binoculars, one of them being "O" rings and another the type of grease used.

As you mentioned, the engineering investigation has not yet been completed and you would welcome comment from the field.

The first thing I would like to comment on is the grease aircraft, synthetic. This authority being HQC 5505-1 Vol 19, DMP (Army) 5.

This grease was issued by RCASC as a replacement for 3-GP-683A and 3-GP-683B. It was found that it also separates and as a result, a fine spray of oil is often found on the reticles of binoculars soon after repairs, especially if the eyepieces are being focused a lot. This breakdown seems to happen regardless as to where the binoculars are being stored, whether in RCOC stores, COD's or in Unit Stores.

Two years ago while a unit of the British Troops (the Buffs) was here in Camp Gagetown I met their instrument technician and he gave me a small quantity of the grease they use on their binoculars. It is called Lubricant Eyepiece Optical Ragosine 0136 (also referred to in HQC 5505-1 Vol 19 DMP (Army) 5.

This grease was tried on several pairs of binoculars that were in for repair. So far the only return has been a couple of pair that the craftsman repairing them was too generous with the grease. This grease gives a smooth positive movement and is found to be a satisfactory grease for use on binoculars and other focusing eyepieces in this area. Hope this information helps your research department. This workshop now has on request from RCASC a supply of the above mentioned grease to be taken into use within the next few days.

To get back to Modification Instrument S-149-1, S sgt Brimmage mentioned the use of more grease. This may free the "O" ring from catching in the multiple start thread for a short while (this workshop has tried this also) but, within a short period of time the binoculars are back for cleaning again because of the fine spray of oil on the reticle, prism clusters and field lens or else the complete eyepiece has been screwed out by the user and the instrument is full of dirt.

As S-149-1 is a required modification to remove the looseness from the eyestack, at this workshop it has been experienced that it is better not to do this modification to all binoculars as they are being overhauled, but just to the ones that really require it.

Experience here has shown that it often helps to just put in the lower "O" ring, even though this does not complete the modification as per EME Manual.

When the top "O" ring is put into place, and the ring stop screwed into place, this in itself forces the "O" ring to cut into the multiple start threads squeezing it at the same time causing a bind.

A remedy that I would like to suggest is to bore out enough of the inside thread from the top of the focusing tube, so that the "O" ring will just go in with it on the lens tube, and to a distance so that when the ring stop is screwed on and completely down into place it will not force the "O" ring into the multiple start threads or flatten it.

I am enclosing the part of an eyepiece, without lens, with the modification completed as I am suggesting it to be done. Doing it this way requires very little extra time using the lathe when the eyepiece is off the binocular and will save many future manhours.

Hoping that my suggestion will help your engineering investigators in clearing up this problem.

Ssgt RF Schlueter

Dear Ssgt Schlueter

You will note that the letter you refer to states that the British do not use "Ragosine 0136" below 0 deg F. Since sample quantities of this grease are being issued to you and to Wainwright it may be interesting to check on its performance this coming winter. I understand it sometimes gets that cold in Gagetown.

Your enclosed modified partial eyepiece assembly certainly works smoothly and is being passed to the design authority as a suggested modification.

If you now put in a suggestion award submission and the modification is adopted perhaps you might qualify for an award.

Thank you for the obvious thought and effort you have applied to this problem.

Sgt O'Sweat

Dear Sgt O'Sweat:

Cribbed from the Camp Petawawa Post which stole it from the Yarmouth Light.

WHAT IS A SOLDIER?

Between the security of childhood and the insecurity of a second childhood, we find the fascinating group called soldiers. They come in assorted sizes, weights and states of sobriety. They can be found anywhere, in tanks, on the battlefield, on various bases, in love and always in debt. Girls love them; towns tolerate them; and the government supports them.

A soldier is laziness with a deck of cards, bravery with a tattooed arm, and protector of the earth. They have the energy of a turtle - the slyness of a fox - the brain of an idiot - the stories of a sea-captain - the sincerity of a liar, and the aspirations of a Casanova. Some of his interests are girls - dames - females - women - and the opposite sex.

His dislikes are: answering letters, wearing his uniform, the old man, and wakey-wakey in the morning. No one else can cram into one fatigue pocket: a little black book, a picture of his girl, a church key, an old pass, and a crushed pack of Exports, plus what is left from his pay last week. He likes to spend his money on girls - beer - and poker, and the rest foolishly.

A soldier is a magical creature you can lock out of your home, but not out of your heart. You can scratch him off your mailing list but not off your mind. He is only a (bleary-eyed) good-for-nothing bundle of worries. But all your shattered dreams become insignificant when he comes to see you, looks at you with those big blood-shot eyes and says "Hi Mom".

WO 2 GHC
2 Fd Wksp

Dear Sgt O'Sweat:

RCEME Technical Bulletin July 63, page 19 refers to EME Manual Instruments X 521. On looking in Instruments A 000 Issue 10 dated 21 Jan 65, I find no X 521.

Has this instruction been cancelled? If so will this appear in a different instruction, also X 510 is somewhat out of date.

Ssgt RC Brimmage

Dear Ssgt Brimmage:

I can't find a copy of the Technical Bulletin dated July 63 and the Editor (who I never believe anyway) tells me he did not publish one in July of that year.

Anyway EME Manual Instruments X 521 consisted of operating instructions for the magnetometer which as you know is no longer in use.

Our Instrument people tell me that Instruments X 510 still applies. Could you be more specific about this complaint?

Sgt O'Sweat

Dear Sgt O'Sweat:

I was very pleased to see the little man with the hammer on the last page of the last issue of the Tech Bulletin, because he has been hanging on my wall since that issue of Flight Safety hit my desk, and in the back of my mind for some years now. That cartoon put him sharply in focus for me.

It's damned good advice. But what is Test Equipment? A multimeter, a bore gauge, a torque wrench, a tire gauge or that hammer that the little man is holding in his hand?

When should it be tested? When issued, once a year, once a month, daily?

What standards should it meet, ± 50% of rating, or ± .01%?

What do you do with it if it doesn't meet the standards?

And last but not least, where do I get the answers to all the questions I've just asked?

B Yarymowich Major

Dear Major Yarymowich:

The problem of testing, or more accurately calibrating, test equipment on an integrated basis is now being studied at CFHQ. Some calibration facilities already exist in the Army but the field will not be adequately covered until present plans are completed and implemented, probably within the next two years. Calibration policy and procedures will be published in EME Manuals and should answer all of your questions.

Test equipment is all the things you list and more. It can be mechanical, electrical or electronic in nature. A formal definition is: "Test equipment comprises devices used to determine the manner in which other equipment is functioning; or the existence, type and location of trouble conditions."

Test equipment should be calibrated by comparing the equipment with a reference standard at specified intervals. The equipment will be submitted to centrally-located calibration facilities for calibration within maximum calibration intervals as designated by CFHQ. These intervals will be laid down in EME Manuals. When test equipment does not meet and cannot be made to meet the standards, the calibrating centre will arrange backloading in the normal way.

Test equipment should meet the standards and tolerances to which it was manufactured. Normally, reference standards will be held at the calibration centres and not at unit level. These units will have no means of calibrating all of their test equipment until the plans referred to are implemented.

Sgt O'Sweat

Dear Sgt O'Sweat:

I believe there is a great deal of interest throughout RCEME in the status of current projects of the MTS group in Montreal. Would it be possible to publish information on these projects, with an indication of progress and proposed date of completion so that we might know if solutions are in sight for some of our problems?

Ssgt RC Brimmage

Dear Ssgt Brimmage:

This is a reasonable suggestion which will be implemented.

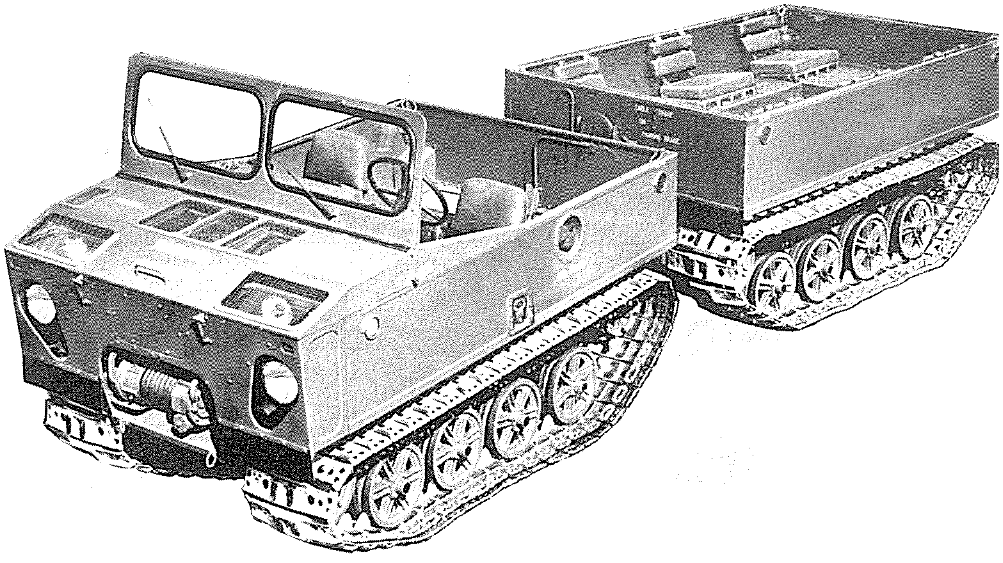
It is considered however, that a complete list is not warranted since many MTS projects are of interest to HQ only, eg, XYO's. It is also considered (because the wheels of progress turn slowly) that a complete list would contain the same projects in each Bulletin and would tend to become boring.

It is therefore intended to list only a few general interest MTS projects at a time; this will eliminate duplication.

Sgt O'Sweat

INTRODUCING THE DYNATRAC BIG BROTHER TO THE RAT

The Dynatrac is a composite vehicle having a full-tracked front unit and an articulated full-tracked rear unit. When the units are coupled, the vehicle becomes an articulated full-tracked carrier of 1 ton payload capacity designed to provide all-season off-road movement over various types of dificult terrain: mud, soft marshes, jungle swamps, muskeg, deep snow and tundra, under extreme climatic conditions and be capable of swimming.



The front unit may be operated alone. It carries the engine and transmission, a gasoline tank, and all controls. Seating is provided for a driver and co-driver and there is enough cargo space for 1000 pounds of cargo. The rear unit is left clear for cargo or passengers and incorporates a gasoline tank beneath the flooring. Seats for two passengers in the front unit and six passengers in the rear unit are carried beneath the floor of the rear unit when not in use.

AH HEAR YEW NEED SOME HELP PODNER!

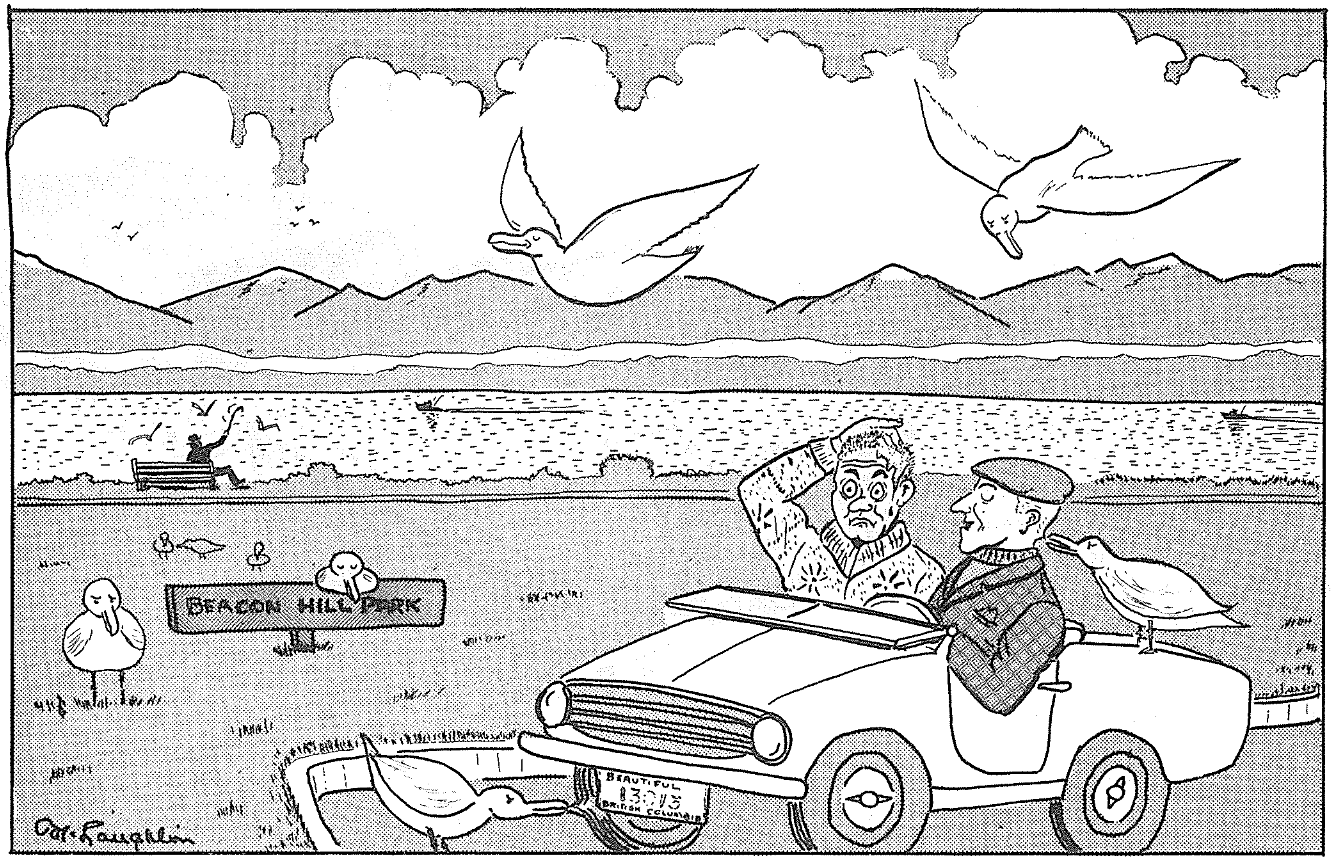
All vehicles are provided with winch, arctic enclosure, and personnel heating and cold weather starting kits. The vehicle is suitable for installation of kits to provide mountings for litters, and various weapons.

The bodies are constructed from aluminum honeycomb panels bonded to aluminum extrusions by a structural adhesive.

The bodies are mounted on hull structures fabricated from aluminum alloy sheet and extrusions. The bottom of both hulls are smooth and flat; the bow is designed to prevent swamping. In the front unit, the hull structure carries towing and tie-down fittings, the engine and transmission mountings, the drive-through hypoid, steering clutches, brakes, sprocket and idler support brackets, front fuel tank, track support roller brackets, the winch mounting brackets and the front portion of the articulated joint.

The rear unit hull carries the rear portion of the articulated joint, hydraulic steering cylinders and mounting brackets, driveshaft mountings, drive-through hypoid (identical to that in the front unit), sprocket and idler support brackets, rear fuel tank, track support roller brackets, tie-down fittings, and a standard pintle.

The Dynatrac has a Chevrolet Corvair



ONE JUST IGNORES THE GULLS IN VICTORIA, MACFUDD!

THE DYNATRAC (continued)

air-cooled engine adapted for service use, the heavy-duty Corvair four-speed transmission and a specially-designed two-speed drop box located between the engine and transmission. This drop box provides in effect eight gear ratios.

Two steering systems are used, a hydraulic system for articulated steering of the complete vehicle, and a clutch-brake system for use when the front unit is operated as a conventional small-tracked vehicle. The hydraulic-powered system is the primary steering system, as it is intended to use the vehicle as an articulated vehicle in all regular applications.

The main attributes of the articulated joint are its quick-disconnect feature and its ability to articulate in a conical envelope subtending an angle of 64 deg.

The tracks are of the band type with aluminum grousers and center guide drive. The basic track is of the high flotation type comprising two rubber bands attached to plate-type grousers.

The sprocket wheels are identical on both units and consist of cast steel hubs, spokes, and drive lugs welded to cast steel rims.

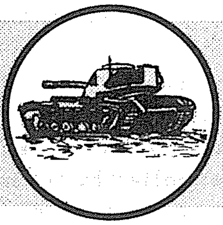
The service brake system is a hydraulically operated system incorporating a Bendix disc brake caliper engaging a cast iron disc mounted on the rear universal companion flange of the front unit drive shaft. The brakes are applied by a conventional foot pedal control.

The front unit parking brake is provided with a mechanically operated system utilizing the Bendix disc brake of the service brake system.

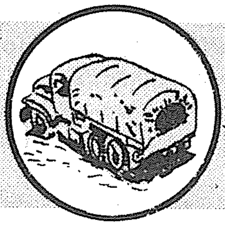
A splash-proof 24-vdc electrical system is provided, which includes a 100-amp ac alternator, rectifier and regulator.

The front and rear units can be coupled and uncoupled in about 3 minutes, and no special tools are required.

Provision is made for a winch of 5000-pound pull with 100 feet of cable.



Technical Section



Units are reminded that Canadian Change 3 to Repair Manual Canadian Veh D 114 Instr 7 (WM-4293) Trucks 3/4 Ton, 4x4, Dodge, Cargo M37 Cdn, Command M42 Cdn, Ambulance M43 Cdn, dated Jan 54, is available on demand from Army Pubs Depot, Plouffe Park, Ottawa, Ont.

MAINTENANCE OF NAVAL MOTOR TRANSPORT

The responsibility for maintenance of Naval motor transport will progressively transfer to the Canadian Army (Auth ZLE 2). Initially the emphasis will be on adoption of army systems and procedures only. The transfer will be so phased that service to the user unit does not suffer.

Further detailed instruction will indicate how this problem should proceed.

RCEME RADIAC MAINTENANCE AND CALIBRATION EXTENDED TO NO 1 AIR DIVISION

The responsibility for radiac maintenance and calibration as detailed in CFHQ Instruction CLED 2/65 has been increased to include the RCAF Units in No 1 Air Division. Two radio technicians left Trenton on 22 October for sixty days in No 1 Air Division where they will inspect and calibrate the radiac instrumentation.

Action has been taken to have a master Radio Technician position established in the test equipment repair unit at No 3 Wing RCAF, Zweibrucken, Germany.

M113A1 AND M577A1 APC CREW SERVICING PAMPHLETS

Issue 2 1965 of the Crew Servicing Pamphlet for the Armoured Personnel Carrier M113A1 and Carrier Command Post, Light Tracked M577A1 (English) has been published. Automatic issues have been made to all user units. Cataloguing particulars may be found on page 28 of the July issue RCEME Technical Bulletin.

Issue 2 of the French version will soon follow and automatic issues will also be made.

Brochure D'entretien a L'intention de L'equipage M113A1 et M577A1

La deuxième émission 1965 de la Brochure D'entretien a L'intention de L'équipage pour La Chenillette Blindée de Transport de Troupe, M113A1, Canadienne et La Chenillette Blindée, Légère de Poste de Commandement M577A1 Canadienne est disponible en Anglais. L'édition Française sera bientot publiee et distribuèe automatiquement à toutes les unités usagères. Les détails de catalogue peuvent être trouvés à la page 28 RCEME Technical Bulletin Juillet 1965.

IMPROVED SOUND RANGING SYSTEM

An ABCA Sound Ranging System project co-ordination office has been set up in Ottawa. The system is a joint UK-CDA development to produce an electronic method of locating enemy artillery. Canada is developing the electronic recorder and computer. The project co-ordinator is an RCA officer who is assisted by an officer of the Royal Artillery. A REME warrant officer is in the Canadian contractor's plant (Computing Devices of Canada, Ottawa) and it is expected that this one-man maintenance advisory group will shortly be joined by a RCEME master radar technician and a RCEME master radio technician. One of the main tasks of these technicians will be to ensure that maintainability is incorporated in the system.

APC M113A1 FAILURES AND THE TFR SYSTEM

Technical Failure Reports (CAFC 2379) (TFR) on the M113A1 continue to arrive at

CFHQ. User units and technicians are to be complimented on their efforts in making this reporting system work. It is providing CFHQ with statistics as to failure trends and parts usage, which is not available from other sources.

The 311 failures to date may be tabulated as follows:

Engine	6
Fuel System	28
Cooling System	4
Electrical	77*
Transmission	4
Transfer Assembly	18
Alternator Mounting Bracket	30
Rear Axle	9
Wheels and Tracks	56
Steering	8
Towing Attachments	2
Springs and Shocks	2
Hull	67

* Reports show that the 'bail out' connector on the H 161 Headset becomes easily disconnected; TFRs are requested on any instance of this happening.

Replacement cable assemblies (5995-051-3088) for the Headset H 161 have been received in limited quantities and a demand for a further quantity has been initiated. Unit demands for the cables will be satisfied from limited stocks or as additional cables become available.

The amplifier AM 1780 seems less likely to fail when mounted directly on the vehicle hull. An instruction will be issued in due course authorizing units to remove the present 'c' type clamp and bolt the amplifier case to the hull.

PRESERVATION AND DEPRESERVATION M113A1

RCEME will soon be issuing EME Manual Vehicles L 104 which will detail the preservation and depreservation procedures on the APC M113A1.

It is essential that vehicles not in operation for periods over 30 days be placed in preservation.

FAILURES 1/4 TON TRANSMISSION

The failure of a 1/4 ton transmission due to broken synchro-mesh rings has been investigated.

The transmission main shaft assembly is held in the transmission case by:

The transfer case, when in use in the vehicle.

A wood or fibre-board plate bolted to the rear of the transmission case while being stored or shipped. (The fibre board plates were originally supplied by the manufacturer with their new transmissions).

The forward end of the mainshaft rides in 14 needle roller bearings set in the rear end of the input shaft. The trouble usually experienced is that, after the holding plate is removed, the mainshaft slips out sufficiently (approx 1 inch) to let the needle bearings drop into the bottom of the transmission case. The transmission must then be partially dismantled in order to retrieve and replace the bearings.

The two synchro-mesh rings will drop down if the mainshaft is allowed to slip even further from the case. One or both of the rings could be broken if the shaft was then pushed back into place.

The above troubles are not common ones. The possibility of ring breakage during rebuild is practically non-existent as the personnel involved have rebuilt hundreds of these transmissions. The mechanics who repair the vehicles and replace transmissions, etc, know the shaft must be held and would only have trouble because of an accident, not through lack of knowledge.

The personnel who usually have trouble are the trainees or the mechanic who is replacing a 1/4 ton transmission for the first time. The trainee finds it difficult to believe how quickly and easily the shaft will slide out once the plate is removed and the transmission tilted slightly.

The trouble is considered to be one which occurs during installation primarily through lack of knowledge.

PUMP ASSY - MED WRECKER M62 2590-00-740-9847

Trouble has been experienced with the above pump assemblies because of improper assembling. Three pumps have been found which have had the pump ring positioned in the pump for clockwise rotation instead of for the correct anti-clockwise rotation which alone gives proper oil flow for this application.

The above trouble appears to have been caused by an error in the manual TM9-8029-3 dated Feb 54 and its superseding manual TM9-2320-211-35 dated Sep 64. Both manuals use the four same illustrations in their descriptions of repairs to the hydraulic pump:

TM9-8029-3 Fig 30, 31, 32, 33
TM9-2320-211-35 Fig 519, 520, 521, 522

The error occurs in the exploded views in both manuals, ie, Fig 33 and Fig 522. These views, while showing the ring correctly positioned for anti-clockwise rotation, have the arrows on the ring indicating clockwise rotation. The arrows shown on the ring in the figures are embossed on the ring during manufacture and there is little doubt that a mechanic would assemble the pump according to the figure arrows rather than to the way the ring is positioned in the figure.

Two figures in each manual, Fig 30, 31 and Fig 519, 520, show both the ring arrows and the ring positioned correctly. A suggested remedy for the error in the exploded views, is to publish amendments to the two manuals which would state the ring will be positioned according to Fig 30, 31, or Fig 519, 520 (dependent upon which manual is being amended) and that the ring arrows in the exploded views will be disregarded.

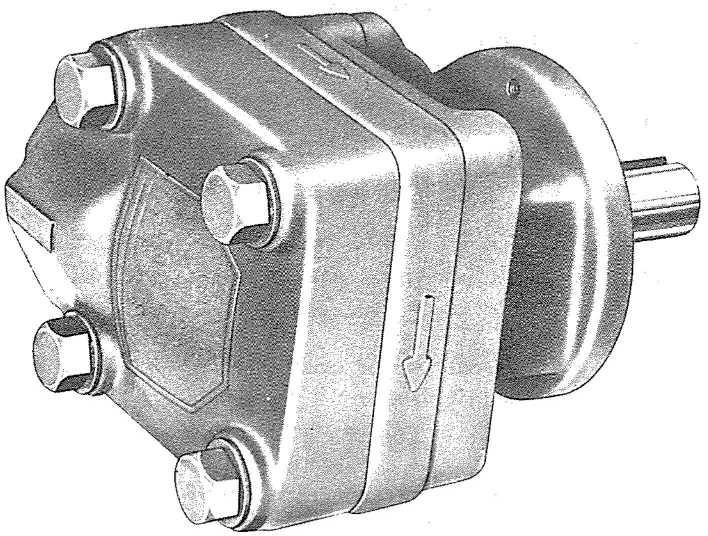


Figure 30

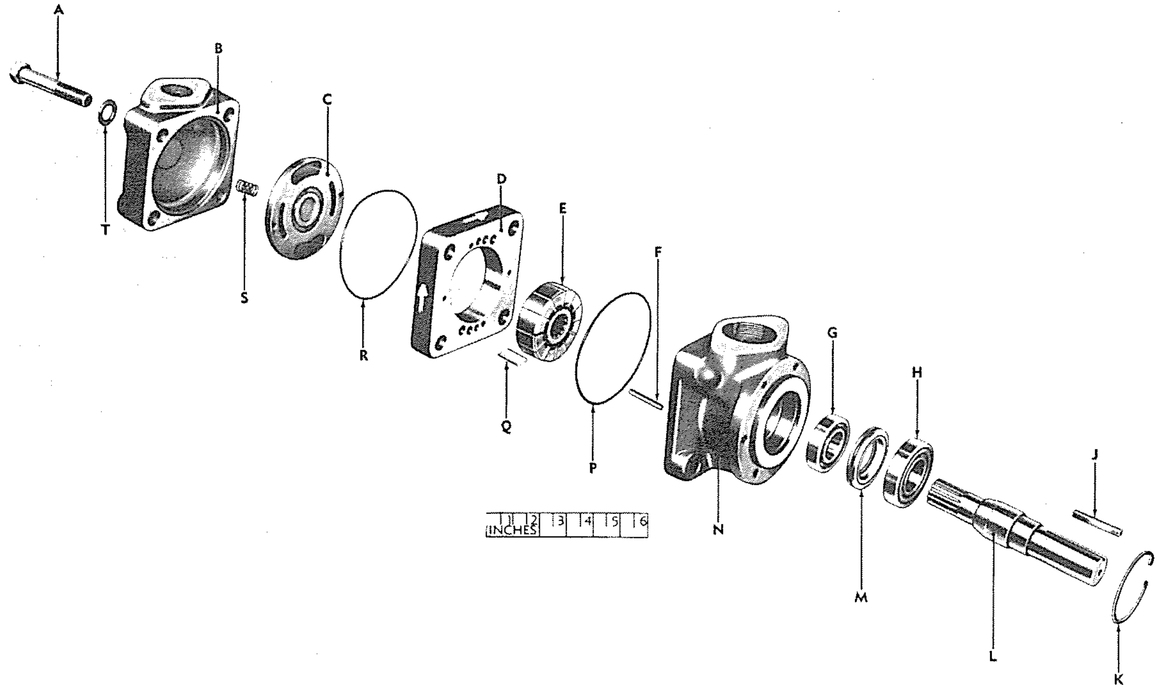


Figure 33

ENGINE OIL CHANGE INTERVALS

Many popular misconceptions about automobiles have persisted through the years and are still widely believed despite all efforts and attempts by manufacturers and research companies to publicize the truth. These myths are a contributing factor in preventing owners from receiving the full benefits from the automobiles they purchase today.

The woods are still full of 'experts' who insist that tires must have at least 30 psi of air to be properly inflated. Products are also sold to unsuspecting motorists that will overhaul the engine or eliminate the necessity of ever changing oil.

The field of motor oils and engine lubrication is a fertile one for half-truths, exaggeration and outright falsification. Statements like "oil never wears out" may have originally sprung from a basic truth but in its application to automotive engines, it must be considered as a falsehood.

Basic engine oil is not compatible with a modern high compression engine. A very complex formula of additives must be compounded into the oil to permit the engine to operate effectively and economically. Despite the advertising and publicity that engine oil additives have received, a recent survey by a major oil company showed that over 17% of their customers demanded a straight mineral oil that contained none of the essential additives.

Even with these additives, the variation in types of driving that cars are subjected to, requires that different lubrication rules be followed for identical automobiles.

The two major types of wear that engine oils must combat are physical (friction or scuffing) and chemical (acid corrosion). The additives that work against one type of wear may do nothing against the other, consequently they must be balanced carefully to allow both to do their jobs.

Contrary to popular belief, a well lubricated engine operating at recommended temperatures produces very little wear when operated mile after mile at sustained high speeds. Still, many people are convinced that this is HEAVY DUTY operation.

Conversely; engine operation at intermittent low speed runs of short duration contribute to both physical and chemical wear. Physical wear occurs because engines that are started cold and operated at lower temperatures must run with the oil at a heavier viscosity, and after the oil has drained away from the reciprocating parts. Chemical wear is increased because the by-products of combustion form acids in the crankcase at a faster rate when the engine is cold. These acids are vaporized and removed when higher operating temperatures and longer operating runs are made. Between short runs the acids condense and corrode the metal parts of the engine. Again many people believe that this type of driving is LIGHT DUTY operation.

Research tests show that some of the anti-wear additives in various brands of motor oil were almost completely exhausted in as little as 385 miles of 'short trip' type driving. Other tests showed only a negligible loss of the same additives after 6000 miles of 'highway driving'.

Dynamometer tests of engines run on oils made without additives, such as Zinc, produced scuffing of rocker arms and valve tips in as little as 30 hrs of operation. When a measured amount of Zinc was added to the test oil, engines would run for indefinite periods without a trace of scuffing.

The foregoing information is basically to alert Dealers' servicemen of their responsibility to their customers in advising them of necessary preventive maintenance. Unfortunately, a large segment of the motoring public still tends to disregard time intervals and rely only on mileage intervals as a guide to oil changes.

To summarize, it is important to change the oil according to the time intervals shown in the following chart. (For chart, see next page.)

CANADIAN FORCES "SENTINEL"

Congratulations to the editorial staff of the new Canadian Forces' monthly magazine. It's a professional looking job.

Although this first issue was mostly written by Information Services staff -- to be sure of having enough copy to get it out on time -- it is hoped, and expected, that in future issues most of the material will be contributed by members of the Forces.

The editors are on the lookout for stories but these must be of general interest. DON'T write about a RCEME bonspiel; DO write about EME services within the Canadian Forces.

If you're interested in writing for the Sentinel, read it thoroughly and study it carefully; use this as a guide for your own writing style. That's what the professionals do.

Keep it simple and easy to read, the editor told us; preferably 500 to 800 words but not over 1,000.

In addition, material submitted to your Tech Bulletin will be passed on to the Sentinel if acceptable. So you have two choices: through RCEME Technical Bulletin channels or direct to the Sentinel.

CESSATION OF AC AND IE TECHNICIAN TRAINING

Since Dec 1964 RCEME has enjoyed one of the benefits of integrated service training in the form of Group 1 Aircraft and Instrument-Electrical Technician Courses conducted by RCAF Station Camp Borden for RCEME personnel. The RCAF training establishment has produced sufficient Group 1 tradesmen to meet forseeable needs. Consequently it has been decided to curtail courses planned for the remainder of this training year. The inter-service training works both ways with potential RCAF machinists receiving their Group 1 training at the RCEME School in Kingston.

CHART

Engine Oil Change Recommendation

Anticipated Lowest Temperatures	Oil Change Intervals
Below 0° F	Every 30 days
Below Freezing and Above 0° F	Every 60 days
Above Freezing	Every 60 days

Note: Listed Below are Exceptions to the Table:

1. If there is danger of oil contamination by dust, water, or other foreign material during extreme operating conditions, the oil should be changed more frequently than shown in the table.

2. Under special high mileage driving conditions such as extended trips, it is recommended that the engine oil be changed if six thousand miles between regular oil change intervals is exceeded.

3. For vehicles in heavy duty operation involving continuous stop-start or prolonged idling, the engine oil should be changed if three thousand miles between regular oil change intervals is exceeded.

Owners who cannot or will not adhere to the above schedule should be strongly encouraged to periodically add a can of Engine Oil Supplement. This concentrate is designed to replenish the supply of additives that become depleted rapidly during continued short trip driving. Owners who fail to abide by recommended service intervals can logically expect wear problems as a result of their neglect.

-General Motors - Product Service Bulletin

EME MANUAL ISSUES

EME MANUAL GENERAL A 005 will henceforth be the authorized means of informing the field of EME Manual issues and cancellations. Issued monthly, each will carry a different instruction number.

The result will be much earlier notification of new issues than when this information was disseminated through CAO Supplements.

Electrical W 729/2 Instr 1
Periscope M19
Details high voltage leak prevention.

Electrical X 951/1
Test Set, Telegraph TS-5052( )/U
Operating instruction.

Electrical X 950/1
Test Set Telegraph TS-5052 ( )/U
Data summary

(Electrical W 720/2
(Instruments S 280
Periscope M19
Data summary combining electronic and instrument functions.

Electrical K 249 Instr 2
Power Supply Vibrator No 12 Mk2
Details common faults and corrective action to be taken.

Electrical I 167 Instr 4
Radio Set CPRC 26
Reissue detailing new pressel switch.

Electrical K 627 Instr 1
Handset H-5003/PRC
Reissue detailing new pressel switch.

Electrical B 342/1
Detecting Set Mine 4C
Technical description.

Instruments B 557 Instr 2
Telescope Panoramic Cdn No 1
Details the fitting of an adapter.

Instruments B 247 Instr 2
Aiming Circle C1
Details replacement or modification of objective assembly.

Instruments B 549 Instr 4
Case and Light Instrument Sighunit C1
Details the addition of lock washers.

Instruments B 549 Instr 5
Sightunit C2
Replacement of retaining ring.

Engineer Equipment O 127 Instr 3
Water Purification Unit
Details fabrication and installation of protective guard.

Engineer Equipment O 127 Instr 2
Water Purification Unit
Details modification to permit stowage of a generator.

Engineer Equipment A 761
Off-the-Highway Tires
Care and maintenance manual.

Aviation Equipment A 111 Instr 15
Monthly EO accession list.

Aviation Equipment A 110 Issue 6
Index to RCAF EOs.

Aviation Equipment P 020
Details maintenance of army aircraft.

Weapons C 829 Instr 3
Rifle 762mm FN C1A1
Details repair for loose locking shoulder.

Weapons E 119 Instr 2
Rifle Automatic 762mm FN C2A1
Details repair for loose locking shoulder.

Weapons G 162
Adapter Subcaliber 84mm Gun L1A2
Technical Description

Weapons G 160
Adapter subcaliber 84mm Gun L1A2
Data summary.

Weapons G 152
Gun 84mm Inf ATK L14A1
Technical Description.

Weapons I 270
Mount MG
Data summary

Weapons I 273
Disassembly repair and assembly procedure.

Vehicles E 039 Instr 29
Truck 1/4 ton M38A1
Transfer of welding kit from M38

Vehicles N 029 Instr 7
Car Armoured Ferret Mk 1
Notification of correct lubrication nipple.

Vehicles N 029 Instr 5
Car Armoured Ferret Mk1
Installation of .30 Browning MG kit.

Vehicles Z 060
Bus 60 passenger SC
Data summary

Vehicles L 103 Instr 2
Carrier Full Tracked Armoured M113A1
Concerns leaking fuel pipe connections.

Vehicles A 110
Provisional Condemnation Policy.

Vehicles N 029 Instr 6
Car Armoured Ferret Mk 1
Concerns gearbox lubrication.

Vehicles E 039 Instr 28
Truck Ambulance M38A1
Details transfer of kit from M38.

Vehicles L 107 Instr 1
Carriers Full Tracked Armoured M113A1
Installation of clearance light and turn signals. (Issued to authorized units only.)

Vehicles T 557 Instr 1
Trailer Stake Tracked
Details new tapered attaching pin.

General A 005 Instr 1
Lists EME Manual issues for Oct 65.

General A 005 Instr 2
Lists EME Manual issues for Nov & Dec.

Management H 105
Calibration of test equipment.

Management H 040
Lists prices of SMP and Tkd Veh assys.

Management V 045
Workshop industrial safety regulations.

Management L 107
Obtaining civilian services by Petty Cash payments.

Management L 104
Obtaining services by Contract Demand.

Management L 103
Obtaining services by Purchase Requisition.

Management L 102
Obtaining services by Local Purchase Order.

Management L 101
RCEME services by Contract.

'HERTZ' ADOPTED BY IEEE

On October 14, the IEEE* Standards Coordinating Committee 14 on Quantities and Units adopted the name 'hertz' for the unit of frequency. This name had earlier been adopted by the National Bureau of Standards and before that by the International Committee on Weights and Measures and by the International Electrotechnical Commission. IEEE Committee adoption of 'hertz' applies to the publication of technical and scientific data.

In adopting 'hertz' the IEEE Committee observed that 'hertz' is preferred because of the widespread use of 'cycle' alone as a unit of frequency. 'Cycle per second' is, of course, technically correct, but the use of 'cycle' in place of 'cycle per second' is declared incorrect.

IEEE adoption of 'hertz' came about as part of the Committee 14 adoption of the International System (SI) of units for the IEEE. These units were earlier adopted by the International Committee on Weights and Measures and were printed in the March 1964 issue of the 'Hewlett-Packard Journal.'

Another aspect of the recommended practice adopted by the IEEE Committee is that the use of British-American units is deprecated. The recommendation states that the 'number of British-American units in use should be reduced as rapidly as possible.' The SI System incorporates the metric system.

-Hewlett-Packard Journal

* Institute of Electrical and Electronics Engineers, Inc.

SPANNER SPEAKS

JOTTINGS FROM GERMANY

Here we are (Sep 1965) in the beautiful Soltau recreation and camping area. And such lovely weather too. What beauty spot can compare with the soggy pines, the dark clouds and glistening mud around all unit locations. Really it isn't quite that bad as days of non-rain (we didn't say sun) have outnumbered days of rain.

By moving up a day earlier than most units the shop was able to start accepting work right away. The load that appeared was amazingly light. Since then we have been going long and hard to keep the other units in action.

Last Monday the workshop moved out for a five day exercise to test the effects of having to operate a shop with a real workload under conditions of frequent alerts and having to provide 'higher' HQ with a demolition guard and a platoon to clear out an enemy patrol. Major Bateson became the exercise director, umpire and friendly LO from Div HQ. Capt Johnston took command and Capt Hutson was his 2 i/c. The exercise was a hard one but most agreed that it was the best and most active workshop exercise that they had been on.

The workload during the exercise was especially heavy for Vehicle, Forward Repair and RCOC Platoons. At one stage even the RCOC Platoon Commander took a tour behind the table issuing spare parts. Vehicle platoon was also the one chosen to clear out the enemy prior to a workshop move. The magnificent charge of that plucky platoon would have been the envy of any infanteer. The political situation stabilized Friday night and the workshop was able to withdraw to its normal location for a well-earned rest. Sunday was a normal working day for most.

* * *

Soltau is all over for another year. And some unappreciative types even had the nerve to say that this was their last Soltau. Just think of all the advantages this outdoor life provides: fresh air, rain, good food, rain, and on the odd day some wet weather. Really, the weather was not that bad; the last week there were more threats than there were showers. The canvas was put away dry which is quite different from Soltau last year and this year's Sennelager.

This was the year of the demolition guard for the workshop. After gaining some experience at this type of job during the workshop exercise in the first week, the workshop had to provide an officer and 20 men for two guards and 20 men for a third (guard) for the infantry exercises the last week. As each guard came back after two sleepless nights, they were a pretty tired group. However, some good lessons were learned. RCEME showed their capability to perform such a mission. It was also a good chance for us to see the infantry in operation even if just a fleeting glance.

* * *

VEHICLE PLATOON REPORT

The fighting vehicle platoon is now reorganizing in Chambly after the Soltau thing. Although we were short of men in the field, we still managed to turn out a tremendous amount of work. Our fellow brigade members certainly managed to produce some challenging jobs for us. The body repair boys got a chance to shine on a few, and the vehicle types churned out multi major assembly changes. We also had our tinsmith, carpenter, textile tech, and welders with us. The electrical wallahs were kept busy with tank repairs, generators, etc. And of course between times we were busy making like infanteers digging trenches, blowing up bridges and such like. All in all, the Soltau concentration was quite an exciting time.

* * *

Many new faces are appearing around the workshop these days as the man for man rotation period comes upon us. There are getting to be so many new faces around that those of us who have been here one year feel like old timers. (How fortunate they are to be able to join the rest of us at Soltau. After all if they are going to camp all over Europe on their leave, it's a good idea to get some experience right away.) At the same time the 'oldtimers' are saying their farewells before taking that last memorable bus trip to Dusseldorf with its delicious meal eaten enroute. Let no one say that their introduction to Germany was the same as their departure; after all they do change the kind of sandwich.

Space would not allow the mention of everyone's name as they come and go. However, some departures cannot go by unnoticed. Among these are Capt Graham the 2 i/c, WO 2 Price the chief clerk, and WO 2 Mike Keogan the friendly QM who is going into retirement in the Ottawa area. New arrivals are Lt JI Hansen from Shilo and Lt JT Thompson transferred from the maintenance troop of the Fort Garrys. Another recent RCEME arrival, although not at the workshop is Capt RE Goulding on the staff at Brigade Headquarters.

* * *

Last week the German Luftwaffe held a display of aircraft, rockets and equipment in Soest to which the workshop was invited by the officer in charge to send a party of warrant officers, senior NCOs and men. Those who went were very pleasantly surprised when their German hosts invited them to a nearby Gasthaus following the tour through the various displays. The Sergeants and Corporals Messes returned the hospitality by inviting the German NCOs to spend the evening as their guests.

The entertaining of a different service of another country in this way may do very little for international relations, but those involved came away with a much better understanding of the German Air Force and how it operates. Let us hope that the Germans left with a greater understanding of Canadians and the Canadian Army.

* * *

If there have been some happy faces around the shop lately it could have been because of the recent round of promotions and appointments. WO 2 Roy Currie was promoted on 16 Sep but for a few days was in a new intermediate rank of Staff Sergeant Major. Other happy people are Sgt Arn AC Adrian, L sgts JE Hooper, WJR Armstrong and JAG Townsend; Lcpls HS Whyte, DB Whalen, GA Heer, D Johnson, JD Arsenault, AW Coughlin, RL Gates, JD Carter, and JD Rolfe.

* * *

CORPORAL'S MESS

It is not too often that we get a chance to knock the powerful major units so when we do we feel it should be heard.

After a '64 season of not one win in the Brigade Corporal's Fastball league the Fort Chambly corporals bounded back with vengeance to run the stretch and end the league series with but three losses.

Coming into the first round of playoffs we met the 69th missile unit and put them down two games to one. Then the finals. We must have learned something from the book "How to Play Baseball", which was presented to us after last year's dismal showing, for it took but three games to put down a strong but outhustled Fort Garry representation.

* * *

The minor units ball season is now over for another year with the Workshop taking the cup for the second year in a row. In regular league play the shop ended in second place and took on the league-leading Transport Company in the playoff semi-finals. In a best of three series they defeated the waggoners 2 games to one and went on to meet 4 Signals Squadron in the finals.

In the first game of the finals the Workshop took the Signalers 10 - 1 on the fine pitching of Lcpl Newell. Sigs came back to take the second game of the best of five series 4 - 2 with Cpl Desormo the winning pitcher. The shop then got back to playing serious ball and took the next two games 16 - 5 and 9 - 6. The last game was the thriller of the series with the workshop having to come from behind twice. However the steady pitching of Lcpl Newell and hitting of Cfn Clark proved to be more than the Signalmen could handle.

* * *

Hardware is becoming a real problem at the workshop this year and we don't mean standard hardware. Trophies are the problem - the shop has won so many this year just about all the available shelf space is being used. This year the workshop has won the minor league championship in hockey, golf and fastball. In addition there are the Fort Chambly Curling Club President's Trophy and the Fort York Curling Club Bank of Montreal Trophy and a few other pieces of gold and silver.

* * *

It is with considerable joy we report that Exercise Cold Comfort is a thing of the past. It would be hard to say which was the most unpleasant aspect of the scheme -- the cold, the rain, the wind, the mud, or the Van Doos. However, the scheme did provide a break in the routine. We could use a few less breaks like it in the future!

Just a reminder that the Children's Party is slated for the 21st at 1400 hours in the Fort Chambly Theatre and Gym. It should be loads of fun for the kids, so be sure and attend.

To finish up this week's screed, here is a yarn submitted by Staff Gattrell, a member of those mechanical missing links, the Inspection Team:

The RCEME Inspection Team, better known as the forgotten part of the workshop, is presently working in the Hemer Iserlohn Area. This is a deviation from last year's itinerary when we had the 'far away' unit to inspect during the month of February when the road conditions were at their worst. Just so we don't miss out on the thrills of hazardous driving (and there are many) the weatheman has been very accommodating and has moved February weather into November and December. One might even speculate there has been a breach of security in BEME's Office and the weatherman has agents getting our latest itinerary.

In any case, it is only too apparent that soon after the bus arrives at our destination, it signals an onslaught of strange happenings in the heavens. Even the local unit personnel have noticed the coincidence, and it is not uncommon for them to break out with placards titled "MTI go home". We are persistent, however, and should be finished in this area early in the new year. The inspection results compare favourably with last year and the cooperation received from the units has been good. While we haven't been met at the bus with steaming mugs of tea, the equipment has been made available to us as required, and we are welcomed to share in the messing facilities during coffee and lunch breaks. To keep us properly indocrinated for our eventual return to Chambly, Ssgt Roy Waugh smokes his pipe full of material calculated to duplicate the famous Fort Chambly glue factory. With a two-hour treatment of this each day during the bus ride we should be in proper shape to return to the fold when our MTI duties terminate.

* * *

Annual refresher training came to a crashing conclusion last week amid sighs of relief all round. The grand finale took the form of a CO's parade at which Major Bateson presented the First Clasp to the CD to WO2 Currie of the Aircraft Platoon. He also presented safe driving awards to seven of our transport section drivers. The day concluded with our workshop hockey team dropping a cliff-hanger to the Service Corps team by a score of 4 to 3 after a very exciting 60 minutes of hockey. However, earlier that week we took a game from a plucky Recce Sqn team 5 to 1. The game was closer than the score would indicate; the difference being the stellar net-minding by 'Gump' Herron in our nets.

Our basketball team had a 50-50 week also. They started off by dropping a game Tuesday to a very impressive team from 4 Fd Sqn, then bounced back to overwhelm the 1 Tpt Coy team on Thursday. The team improves with every game and we figure to have a real contender for the playoffs.

Plans are well under way for our Annual Children's Christmas Party. This year the big event will be held on 21 Dec starting at 2 pm. We hope to have movies and gifts for the small fry, and the RCOC Band has kindly offered to provide us with music. Naturally we also hope to have a visit from the fat cat from the North Pole.

To close, we would like to add a heartfelt plea from our sadly overworked body shop to drive carefully while driving conditions are treacherous. The body boys don't need the work.

* * *

No one in his right mind even questions the technical ability of the average RCEME tradesman. This is a fact! However, what is generally not as well known is that our people are proficient in many other fields as well. We have in our midst top notch skiers, hockey players, rifle shots, intellectuals, philosophers, etc. RCEME flashes seem to turn up in the most unexpected places.

Congratulations to Cfn Brown of the Weapons Section. Just returned from a PT course at the British Army PT School at Aldershot, where he performed with the usual RCEME versatility. Among other things he won for himself the ASA Gold Award, the RLSS Bronze Medaillon, and reached the 5th KY U (yellow belt) level in Judo. While finishing high up on the course, Brown also managed to play hockey for the Wembley Lions in his spare time. Here is one craftsman who isn't going to have trouble with his battle efficiency tests this year.

* * *

To conclude our effort this week, here is a piece, authored anonymously, on those mainstays of 4 Brigade, CBUE's contribution to RCEME efficiency, the Garrison Workshop:

"The inspection team has dubbed itself the forgotton part of the workshop. We in Garrison Workshop feel the title can also apply to us.

"When the Field Workshop moves out on training exercises we remain the LOBs, the forgotton part. We realize our duties require us to remain behind to supervise the civilian component of the Garrison Workshop, but at least we would like a combat uniform. When the Field Workshop reports on alerts fitted out in their attractive and manly gear, we report in normal working dress to wave them farewell. While the Field Workshop indulges in such sporting activities as night moves, mounting defences, and camouflaging vehicles at first light, which all goes to spice up the normal repair function, we return to our drab positions as section supervisors and duty personnel. For us will never come the thrill of losing a packet and then by devious means coming in first at the new location. We will never know the terrific appetite which comes with the outdoor living and appreciate how good stew a-la-mode can taste. A-la-mode translates into "according to the custom which is sand and leaves that find their way into the mess tins at every gust of wind." We also will never know the pleasure of a night's rest after long hours without sleep. The acorns hardly penetrate the sleeping bag after the first few nights. On second thought maybe we are not so badly off in Garrison Workshop and we would like to remain the 'forgotton part' when the Field Workshop goes galavanting. We will even be content to wave farewell without a combat uniform."

-The Beaver

DEME Christmas Party

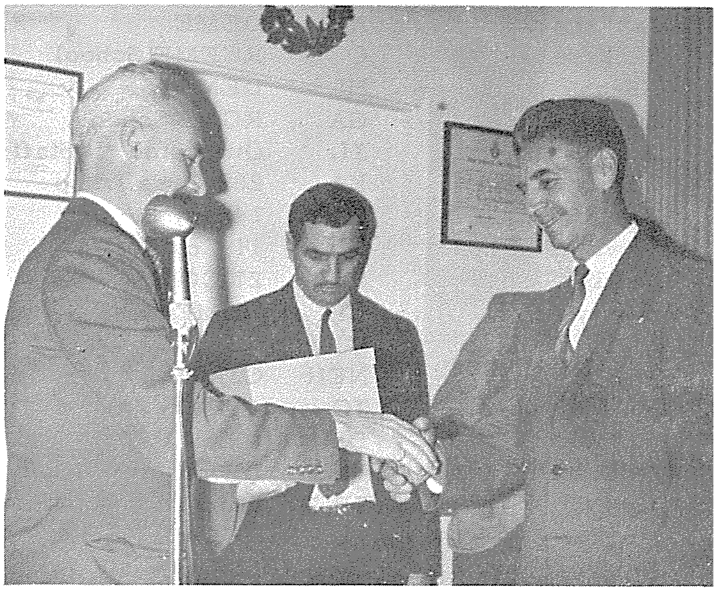
DEME, Canadian Forces Headquarters, held a Christmas party on Friday, December 17. It was attended by Brig EH Webb, CCLG, Col KR Ward, the Director; and his two immediate predecessors, Col A Mendelsohn and Col RA Campbell.

Invitations had been sent to 45 all ranks who had served in the Directorate since 1956. Among those who showed up were Herb Gallier, ex-WO1 who left DEME in 1956 on posting to the School, and Sgt AJ Lacelle who retired in 1960.

The usual retiring presentations were made to John O'Neill and Norm St Germain. Capt O'Neill retired earlier in 1965 and WO2 St Germain retired at the end of the year.

The typists and stenographers were given Christmas boxes and many prizes were won by people answering questions that tested their skill and knowledge.

WO2 St Germain receiving his presentation from Col Ward, while the MC, Capt Jules Klinec looks on.



who's where

LOCATION OF RCEME WARRANT OFFICERS

As of 1 Dec 65

Class 1

Baynes	CH	CBUE
Boisvert	L	Que Comd "I" Staff
Brown	AT	10 Coy
Buck	WM	14 Coy
Campbell	DN	RCEME School
Cozens	SD	RCEME School
Crane	CE	HQ Camp Borden
Dagenais	EJ	AEEE
Deans	AG	13 Coy
Dodds	TH	RCEME School
Doherty	E	202 Base Wksp
Drew	CV	AEEE
Drobot	W	5 Coy
Dudley	J	D Org
Elliott	WEC	10 Coy
George	AG	202 Base Wksp
George	LJ	FGH
Gladwin	CH	CADEE
Guilfoyle	ME	ME
Hanash	J	13 Coy
Hayes	JW	DEME
Henry	JE	11 Coy
Houlton	VH	DEME
Hurd	LR	202 Base Wksp
Jackson	AF	DEME
Jackson	O	RCEME School
Keech	HL	DEME
Knowles	GA	RCAC School
Landry	JL	Que Comd "I" Staff
Lee	KA	202 Base Wksp
Leonard	WV	14 Coy
Lewis	CB	11 Coy
Lewis	SM	27 COD
Lowry	LH	DEME
MacDonald	DJ	DEME
Mahood	NEH	CJATC
Mallett	JC	AEEE
McInnes	DM	4 Coy
McMurchy	WS	DEME
Meloche	JB	8 Coy
Mercer	JL	RCEME School
Norbury	G	13 Coy

Class 1

Oakes	GAM	DEME
Owen	LR	RCD
Rivers	AM	RCEME School
Robertson	WG	3 Coy
Rowe	AW	RCEME School
Rutherford	FA	CJATC
Schleihauf	GH	DCER
Shaw	JE	DEME
Silzer	J	RCEME School
Sinclair	L	C Ont Area "I" staff
Snell	JD	AEEE
St Pierre	G	LdSH (RC)
Stever	JD	AEEE
Stringer	AJ	1 Fd Wksp
Szumlanski	J	RCEME School
Thivierge	AJ	AEEE
Thomas	GA	DEME
Walsh	IS	4 Fd Wksp
Warren	DH	202 Base Wksp
Weston	ET	AEEE
Wilson	RR	6 Coy
Young	RD	SAS List

Class 2

Ablett	JA	4 Fd Wksp
Adams	RJM	RCEME School
Allen	EB	10 Coy
Allen	JJ	202 Base Wksp
Allen	WG	1 Fd Wksp
Almey	B	DEME
Anderson	SB	RCEME School
Armstrong	RWF	2 Tpt Coy
Arscott	NL	RCEME School
Ashdown	GG	202 Base Wksp
Atwood	FH	14 Coy
Babb	CH	DEME
Bailey	E	10 Coy
Baldwin	TW	202 Base Wksp
Balmer	AJ	10 Coy
Banks	WE	2 RCHA
Barker	NG	RCSA

Class 2

Barrett	GJ	RCEME School
Bateman	NFK	1 CIBG
Beeson	EG	202 Base Wksp
Bellefontaine	AEL	6 Coy
Betcher	WL	4 Fd Wksp
Blackmore	HE	RCEME School
Blair	WE	DEME
Blanchette	EEJ	3 R22R
Boon	J	DEME
Both	TA	13 Coy
Bottle	DA	1 Coy
Bovey	ET	RCEME School
Broomer	TF	RCEME School
Brown	AW	10 Coy
Brown	RG	ME
Burgess	EW	7 Coy
Burns	HS	4 Coy
Cameron	FR	2 Cdn Gds
Cameron	WE	27 COD
Carefoot	WN	202 Base Wksp
Carver	AE	RCEME School
Cassidy	GP	RCEME School
Celli	AJ	202 Base Wksp
Clarke	AL	1 Fd Wksp
Clooney	RT	RCEME School
Coles	JC	11 Coy
Colson	AR	3 Coy
Coughlan	GH	2 Fd Wksp
Coughlin	AF	2 Fd Wksp
Cross	RC	1 RHC
Crosson	JH	14 Coy
Cunningham	JM	4 Coy
Curran	RJ	RCD
Currie	WR	4 Fd Wksp
Cyr	C	4 Coy
Dainty	WH	8 Coy
Dance	GN	RCEME School
Dand	RJM	4 Tpt Coy RCASC
Davis	WE	RCEME School
Dillon	JB	202 Base Wksp
Dinner	A	RCEME School
Dorey	EE	27 COD
Drake	EA	6 Coy
Dyck	D	2 R22R
East	SW	2 Coy
Eno	JB	14 Coy
Evans	RL	10 Coy
Fairchild	R	3 Coy
Ferguson	HG	1 Cdn Gds
Fielding	C	27 COD
Foley	HEF	3 RCHA
Fourcaudot	C	5 Coy

Class 2

Frankovitch	M	RCEME School
Fryer	JWA	7 Coy
Gall	GJ	CADEE
Gavriloff	W	AEEE
Gill	DE	AEEE
Goss	RB	1 RCHA
Greenshield	W	4 CIBG
Griffin	GW	3 Coy
Grouette	JWP	1 R22R
Halliday	AG	3 Coy
Hardy	JR	4 Fd Wksp
Harper	JM	E Ont Area "I" Staff
Hasler	HJ	202 Base Wksp
Haugen	RG	202 Base Wksp
Hennessey	RF	RCEME School
Henry	CR	11 Coy
Hewisson	RW	1 CIBG
Hill	LJF	CFHQ/AU
Hinton	WG	RCEME School
Holt	JS	4 A Tk Coy
Hooper	TC	4 Fd Wksp
Hynes	BJ	2 RHC
Janssen	MEJ	202 Base Wksp
Jodoin	LH	RCEME School
Johnson	GM	RCEME School
Johnson	GT	ATOB
Johnson	RL	EBS
Johnson	WA	7 Coy
Johnstone	T	4 Coy
Jones	HR	RCEME School
Kelly	M	13 Coy
Keogan	MJ	AEEE
Kirkpatrick	AM	8 Coy
Konzuk	A	1 Fd Wksp
Krupp	HH	NB Area
Kutyick	J	CBUE
Lasuta	W	202 Base Wksp
Lannan	FX	2 Coy
Lawrence	BJ	11 Coy
Lefebvre	R	202 Base Wksp
Lewis	LH	202 Base Wksp
Little	JE	DEME
Loven	KD	202 Base Wksp
MacDonald	CW	CJATC
MacLean	CB	CADEE
MacLeod	D	5 Coy
Main	T	1 Fd Wksp
Mandeville	E	3 R22R
Manning	RW	11 Coy
Marin	EW	2 CIBG
Mason	RAH	202 Base Wksp
Maxell	AC	2 Fd Wksp

Class 2

McBlane	AG	Alta Area "I" Staff
McCormack	CB	7 Coy
McDonald	AE	1 RCR
McDonald	DW	Western Ont Area
McDow	KA	AEEE
McElroy	JC	2 Coy
McGovern	PMJ	AEEE
McIntyre	WA	27 COD
McLaughlin	WE	2 Fd Wksp
Measor	HD	HQ 4 CIBG
Milne	HC	EBS Bn
Molnar	LA	DEME
Monkman	WWB	ME
Moore	WE	DEME
Munday	AC	10 Coy
Myatt	WC	EBS Bn
Nelson	WJ	8 Coy
Newell	GS	HQ RCEME Wescom
Neudorf	I	HQ Man "I" Staff
O'Grady	CL	NS PEI "I" Staff
O'Rourke	WW	2 Coy
Orme	JI	RCEME School
Patterson	MP	9 Tpt Coy RCASC
Pennie	FM	11 Coy
Perrier	LG	ME
Perrin	WG	202 Base Wksp
Phillips	EW	RCEME School
Pineo	MC	LdSH
Pirt	KMC	CJATC
Pomroy	VRC	Sask Area
Press	J	AEEE
Price	EC	HQ RCEME C Comd
Rawling	GW	D Pers RCEME
Reid	FL	202 Base Wksp

Class 2

Rhodes	AP	27 COD
Richardson	PH	8 CH
Robertson	DW	1 Tpt Coy RCASC
Rodd	EL	CADEE
Ronan	JM	DEME
Russell	MM	13 Coy
Sheldon	ND	202 Base Wksp
Simpson	WG	2 Coy
Small	WF	2 Fd Wksp
Smith	L	4 Coy
Smith	NC	DEME
Smyth	WC	27 COD
Stewart	GG	202 Base Wksp
Starbo	RM	13 Coy
Summerfield	JW	10 Coy
Taylor	CE	4 Fd Wksp
Taylor	JF	1 Fd Wksp
Thibaudeau	AE	202 Base Wksp
Thompson	TAE	202 Base Wksp
Thorne	J	ME
Tinnan	TJ	202 Base Wksp
Trattles	EW	1 Tpt Hel Pl
Trinca	JL	2 RCR
Walker	J	1 PPCLI
Wallace	AE	DEME
Weaver	CR	DEME
Whitehead	TG	4 RCHA
Wild	EB	13 Coy
Wilson	ME	2 PPCLI
Wood	WJ	2 RCHA
Woodrow	JA	6 Coy
Wright	EO	RCEME School
Wright	EG	HQ Eascom

WORKSHOP SAFETY REGULATIONS

With the exception of a few instructions for the handling of specific materials and the requirement for civilians employed in hazardous trades to have medical examinations, industrial safety regulations vary from workshop to workshop. Normally industrial safety regulations are originated by Commanding Officers and published in Unit Standing Orders and in most cases do not include all provincial safety regulations.

Now with the publication of EME Manual Management V 045 this condition should be improved. It includes regulations from the Ontario Industrial Safety Act 1964, and the Federal Department of Labour Safety Manual for Government Departments and Crown Agencies 1961 that are applicable to Workshops. It is considered these regulations will meet the requirements of all provincial labour laws concerning safety in Canada.

Though military workshops are not subject to provincial labour laws it is recommended that these regulations for workshop industrial safety be authorized to provide safe practices, conditions and procedures for the prevention of industrial accidents.

The authorization of these regulations may necessitate additional protective devices and modifications to some workshop machinery, equipment and buildings to comply with the regulations.

INDEX TO 10 YEARS OF BULLETIN

We have copies of many of the issues from 1956 to 1965. If after studying this index, you would like to have any of these, write to the Editor, RCEME Technical Bulletin, DEME, CFHQ, Ottawa.

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BOOK REVIEW

THE MIDDLE EAST: A social geography by Stephen H. Longrigg. Published by Gerald Duckworth & Co, Ltd, and available in Canada from Thomas Nelson & Sons, Don Mills, Ont. $8.75. Brigadier Stephen Longrigg, OBE, D Litt, served 47 years in the Middle East and had written six books about various parts or aspects of it before writing his new book as a social geography. There is no doubt that this provides useful reading for those about to serve in the various United Nations' commands in the Middle East. Better still it would make a handy reference book to carry along.

Its four maps and seventy pictures are excellent and greatly augment the text. Three of the pictures of Beirut, Cairo and Haifa unfortunately appear to have been taken in the 1950s and some remarkable new buildigns are not shown. However this is always a problem with rapidly developing cities.

The book is well and logically laid out with chapters on geography, history, public and private life, agriculture, industry and oil. Two chapters divided into Arab and non-Arab countries deal with each country in a separate section. Specifically, the Arab countries are Iraq, Lebanon, Syria, Jordan, Egypt(UAR), Sudan, Sa'udi Arabia, Yemen, Southern Arabia and the Persian (or Arabian) Gulf States. The non-Arab countries described are Persia (Iran), Turkey, Cyprus and Israel.

The sections end with useful information on the money and measuring systems in force. This is important as every country differs in almost every aspect.

There are two very useful indexes and three appendices. The bibliography in Appendix C is very good. One index lists the countries down the left side and subjects for reference across the top. These subjects include agronomy, area, population, climate, topography, communications, history, industry, languages, oil, races, religious resources and society.

Various controversies and problems of the region are mentioned and in many cases useful background is given. Water in the Middle East is often a source of trouble, whether it is in the big rivers like the Nile, Euphrates or Jordan or in oases such as those at Buraimi. Bickering between Iraq and her neighbors, Kurdish unrest and Yemeni claims on Aden are all given mention. It is important to have information on the problems though the author discourages thought of easy solutions.

In summary, the book gives brief and factual information on the Middle East while being both interesting and readable.

-Col MC Sutherland-Brown
in the Sentinel.

NOT HIS JOB

"I'm not supposed to do that," said he,
When an extra task he chanced to see.
"That's not my job, and it's not my care,
So I'll pass it by and leave it there."
And the boss that gave him his weekly pay
Lost more than his wages on him that day.

And time went on and he kept his place,
But he never altered his easy pace,
And folks remarked on how well he knew
The line of tasks he was to do.
For never once was he known to turn
His hand to things not of his concern.

But there in his foolish rut he stayed
And for all he did he was fairly paid,
But he never was worth a dollar more
Than he got for his toil when the week was o'er;
For he knew too well when his work was through,
And he'd done all he was hired to do.

If you want to grow in this world, young man,
You must do every day all the work you can.
If you find a task, though it's not your bit,
And it should be done take care of it;
And you'll never conquer or rise if you
Do only the things you're supposed to do.

–Hudsonian

The Royal Canadian Corps of Signals at Western Command Headquarters in Edmonton, has a mobile diesel generator to provide emergency power for a teletypewriter. On one occasion a failure in city power prompted the signals officer to call for the auxiliary generator. When no generator arrived, he called again and demanded the reason for the delay. The explanation? The generator was housed in a garage – and the garage door was power-operated!

-Readers' Digest